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ORIGINAL ARTICLES.

ABDOMINAL SECTION FOR TRAUMATISM, WITH TABLES OF TWO HUNDRED AND THIRTY-FOUR CASES.

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The term "abdominal section for traumatism" is meant to include all cases where the surgeon as a primary measure deliberately opens the abdomen or enlarges an already existent wound for the purpose of searching for intra peritoneal lesions, and, if they are proved to exist, of repairing them as far as possible, but in any case to cleanse the cavity and render it aseptic.

In January, 1887, under the above heading, I presented to the Philadelphia County Medical Society, tables of fifty-seven cases and comments thereupon, as well as a number of unpublished case histories. In that paper, which was the first collective résumé of the subject, I arrived at conclusions which I am willing to again offer now as substantiated by the much larger knowledge set forth in the present tables.

Shortly after the appearance of that first series of tables I was glad to grant the request of Sir William MacCormac that he might republish them as an appendix to his oration upon "Abdominal Section for the Treatment of Intra-peritoneal Injury" before the Medical Society of London. Since the appearance of that monograph tables of gunshot wounds have been published by Baker, Dalton, and Coley; also one of ruptured bladder by Grant. To each of these authors I am indebted for one or more valuable references, also to Dr. John Ashurst, Jr., for a number of references and for several corrections in the present tables; and to each of those gentlemen whose cases in the tables are marked "unreported," for the privilege of publishing them. But to the conductors of the *Index Medicus* I am most indebted, for without the aid of that periodical the construction of such statistics would verge upon the impossible.

The field bounded by my title and definition having been thoroughly tilled in the previous paper will not again be gone over systematically; merely an old point here and there will be emphasized or a new one introduced. As before, a number of cases of section for traumatism have been excluded where interference was delayed until after the lapse of many days or even weeks or months. These can properly be kept out of a tabulation of primary operations and should be classed, as suggested by Gaston, as "secondary section for traumatism."

The statistics presented in this communication are not contrastable with those of the first paper because in the new totals are included very many fatal cases which had been operated upon prior to January, 1887, but which up to that time had not been published. Encouraged by seeing other fatal cases reported many operators have since put upon record fatal cases previously treated, so that while almost none but successful cases had up to that time been recorded, now almost all have been published. It is extremely gratifying however, to note the steady decrease of mortality attendant upon this modern procedure, and the more so because the recovery percentages of the present tables have had to contend with a flood of fatalities which properly belong to the earlier statistics. Also is it most satisfactory to find after the lapse of but little over two years that the very last opponents to section for traumatism—then so numerous—have long since been silenced or converted by the eloquent teachings of accumulated experience, knowledge, and result.

The total number of cases of abdominal section for injuries of all classes resulting from traumata which I have been able to collect up to date is 234. Of these 96 recovered and 138 died, a general mortality of 58.97 per cent. Of this total, 110, or 47 per cent., were gunshot wounds; 79, or 33 per cent., were stab wounds; 27, or 11 per cent., were ruptured bladders; and 18, or 7 per cent., were cases of ruptured or contused intestines.

Ninety-seven American surgeons operated upon 165 cases with 62 recoveries and 105 deaths, a mortality of 65.45 per cent; while 64 foreign surgeons operated upon 69 cases with 34 recoveries and 33 deaths—a mortality of 47.82 per cent.

By cities, operations were performed in: Philadelphia 32, New York 25, St. Louis 22, London 22, and in Chicago 13.

The causes of death as indicated by the tables form an array which is shameful to modern surgery and one which we may expect to see entirely reversed and changed for the better ere the time comes for again revising the statistics.

Death succeeded operation from causes as follow:—shock and prolonged operation, 8; peritonitis from delayed operation, 36; peritonitis developing subsequent to operation, 16; peritonitis from overlooked wounds, 11; peritonitis following extravasation from poorly sutured wounds, 4; ditto from wounds which it was impossible to suture, 2; toxæmia from absorption of urine from the peritoneum because of delayed operation after bladder rupture, 7; opium poisoning, 2; cholæmia from obstructed hepatic duct, 2; gangrene of bowel, pericarditis, cerebral embolism, and delirium tremens, each 1; not stated, 16. In 4 other cases overlooked wounds were found post mortem but the patient had perished of other causes before peritonitis could develop.

Three cases died upon the table: 2 from hæmorrhage; 1 from shock and prolonged operation. Ten cases died immediately upon removal from the table, and 40 within 12 hours. Very many of the cases were upon the table a very long period of time and it is to be sincerely hoped that a more general introduction of modern time—hence life—saving methods of dealing with intestinal lesions will do much to ameliorate the death-rate of these cases.

In eighteen instances penetration of the peritoneal cavity was proved, the abdomen opened, and no intra-peritoneal injuries found. All of these recovered save two, one of which died of accidental opium poisoning, the other, of causes not stated, in thirty-six hours. In my opinion all of these cases were far better off opened and cleansed than if they had been let alone with the possibility of subsequent septic inflammation or of unsuspected visceral wounds. Apropos of this very point is a case in the tables where it was concluded that because the hydrogen insufflation test gave negative results that there could be no justification of opening the abdomen. Violent peritonitis speedily developed, and the abdomen was then opened; no wounds were found but a violent general purulent peritonitis was present and from it the patient subsequently died.

Many symptoms of intra-abdominal injury have in the past few years been proved entirely fallacious and unreliable. Thus, in the tables are recorded many cases where with most intense shock either no injury existed or only those of most trivial description were found, whilst on the other hand, patients walked great distances and remained for hours without the least sign of shock when multiple perforations of the intestines and other terrible injuries had been inflicted. Nor should much reliance be put upon the apparent direction of a bullet, for it is a notorious fact that the abdominal parietes will most readily divert balls from their tracks and occasionally deceive the very elect. Neither should a surgeon be content simply to lay open a ball track that has partially traversed the abdominal cavity, and repair only such injuries as he may find immediately beneath, for the great probability is that injured intestines may, by peristaltic or other force have been drawn to parts of the abdominal cavity most remote from the seat of the injury. In the tables several good instances of this fact are also to be found. Likewise emphysema of the wound surroundings may be a worthless sign. Several times it has been present when the intestines have not been perforated. Disappearance of the usual liver percussion dulness has also frequently been noted when the intestines were simply distended and no perforation existed.

Even my profound respect for Dr. Senn and his contributions to surgical science cannot make me an enthusiast for his hydrogen insufflation test for perforations of the intestinal canal. With me it would be an exceedingly exceptional case in which its assistance would be requisite to determine whether to open the abdomen or not. The tables show that the test has been applied for this purpose eleven times. In eight instances it proved perforations to be present, and in two their absence. Of the latter, one died of septic peritonitis; which death most probably could have been avoided had the abdomen been opened and cleansed upon the simple indication of penetration of the peritoneum. In one Philadelphia case, in the hands of Dr. O. H. Allis, the test was applied thoroughly and failed to demonstrate intestinal perforation. Signs of violent intra-peritoneal hæmorrhage being present however, the abdomen was opened and two perforations of intestine as well as a great amount of free blood were discovered. This patient died upon the table from terrific hæmorrhage originating in an half inch wound across the root of the mesentery. I can see but a most narrow field for the insufflation test in intestinal injuries for, of course, it will at most demonstrate nothing but perforations and will lead the operator, if he trusts to it, to overlook multiform other lesions which are often just as dangerous as perforations themselves. The test will in most cases prove *perforations* but will not invariably do even this, as is instanced above. Many conditions such as impacted fæces, prolapse of mucous membrane and recent adhesions are liable to interfere with its proper efficacy and offer a misleading, perhaps ultimately fatal result to those who rely implicity upon it. Neither can I concede it to be, *per se*, a harmless test, for its application must often occasion extravasation of fæces when that complication may

not already have taken place, or rupture of the bowel might be produced, and further the time lost and additional shock produced by its application are all elements to be considered before the test is put into routine use.

The indications for section for traumatism are few but comprehensive. In most cases they resolve into a single one—*proof of the fact of peritoneal penetration*. More difficult to propound but none the less important are the contra-indications thereto. It would be better not to interfere whilst profound shock lasts unless it depends upon such condition as continuing hæmorrhage; in which case it would be the surgeon's duty to interfere even if the patient be *in extremis*, for the surgeon of the near future who is to do many of these operations will not be able to boast, even early in his career, that he has not lost a patient upon the table, because that most distressing occurrence will occasionally be inevitable if we do our whole duty by such desperate cases as are these.

Where portions of one or more viscera have become prolapsed through the wound no contra-indication to section and thorough search for other lesions is presented because it is never by any means certain that the prolapsed portions were the only ones liable to injury by proximity to the entrance wound, for they may not have become prolapsed until long after the original injury, and from an entirely different portion of the abdomen. If the physician in attendance is quite ignorant of abdominal surgery, or if the surroundings of the patient are exceedingly bad, delay and awaiting symptoms of peritonitis may occasionally be pardonable, but under circumstances in the very least degree favorable and often when most unfavorable, the time for operation should ever be at the earliest possible moment after injury. No statement in this paper is better justified by a study of the table facts than is this latter.

Median incision is also universally commended as best, and many fatal cases are directly attributable to neglect of the overwhelming evidence accumulated in support of the rule. So also of the oft repeated caution to be systematic and thorough in the search for lesions, for it is impossible to find all lesions which may be present unless this rule is rigidly adhered to. Exceptions to it of course exist, as in case of violent hæmorrhage to which attention would always first be directed but, no matter what are the circumstances, at some time before it is closed the abdomen should be gone over systematically in all cases where there is the most remote possibility of lesions being present.

Another point of value in these cases of abdominal injury is to wash out the stomach in order that its contents may not induce vomiting after operation, or, by passing into the alimentary canal, cause interference with the process of wound repair. This should be accomplished before the induction of anæsthesia unless the patient has already vomited freely, when it may be omitted.

Excision of the intestine was performed seventeen times in fifteen cases by the old method; of these two recovered and thirteen died. Undoubtedly the more general knowledge and application of Senn's methods of intestinal resection and anastomosis will soon exactly reverse these figures, and also by their application to many such conditions as undue narrowing of the bowel lumen after suturing wounds, these same procedures will save still other lives in which heretofore we would rather have risked stenosis than the almost invariably fatal operation of intestinal resection. Anastomosis will usually be preferable to excision because we can often utilize a perforation for one approximation opening or even draw together two enlarged perforations, thus not only saving the time of an old fashioned excision but also that of suturing the utilized perforations. The variety of ways and in what combinations the Senn methods can be adopted are almost unlimited to one having a thorough knowledge of their application. Senn's method of supporting repaired wounds with omental flaps will also find wide application in this field. One instance is reported in the table where the surgeon sewed into a very large wound of the stomach (which could not be approximated without producing severe stenosis) a large graft of mesentery, which clever suggestion opens up a new mine of resources for certain destructive intestinal wounds. The graft, however should always be taken from the omentum and not from the mesentery as reported.

Thrice abdominal nephrectomy was performed and but one case recovered. Twice the spleen was removed and both patients died. Once the gall-bladder was excised—for rupture—and the patient died of cholæmia produced by an overlooked stone which had been driven from the bladder into the hepatic duct at the time of injury. The ureter was cut through by a ball in one instance but the injury was not recognized at the time of operation and the patient subsequently died because of it. In several cases death was due to wounds of the rectum situated so deeply in the pelvis as to render suture of them impossible and the patients died of peritonitis. No really efficient method has yet been devised for treating such injuries, but distension of the rectum by the rubber bags which are sold for the purpose, would undoubtedly bring certain of these wounds into sufficiently easy reach. In two cases the diaphragm was wounded by the vulnerating body gaining access to the abdomen *via* the thoracic cavity. In each instance a hernia of viscera into the thorax existing at the time of operation was reduced, the diaphragmatic wound sutured with catgut, and perfect recovery ensued,

After the search for lesions and their possible discovery and repair it is of extreme importance to thoroughly irrigate or wash out the whole cavity with hot water both as a cleansing agent and as the best method of treating the shock which is almost always present in greater or less degree at this stage of the operation. And just as important, yes more so, is drainage; these two measures are the great life savers in abdominal surgery and it is a matter of great congratulation that they are coming into almost universal use in those cases where there is any indication for their employment. One can never go wrong in employing either irrigation or drainage; which is vastly more than can be said in favor of the omission of one or the other or both. Drainage should invariably be used where there have been signs of peritonitis present, extravasation of fæces or food, or where the operation has been undertaken late. It may be omitted in certain rare instances where there have been no signs of peritonitis, no extravasation, and no wounds of intestine. Drainage is a point ever difficult to decide against and it is always better when in even the slightest doubt to put in the drain. For this purpose nothing equals the glass drains of Keith, kept in proper working order by an absorbent wick of cotton as suggested originally by Mr. Greig Smith.

As many sections for injury are not undertaken until some signs of peritonitis are present, operators should keep in mind the resource of making ½ inch incisions into the periphery of the intestines for the relief of gaseous or other distension. These wounds should immediately be sutured in exactly the same manner as are those produced by the vulnerating force. By their assistance intestines can always be reduced to the abdominal cavity without undue forcing or handling, and in much better and safer condition than if returned in a distended condition.

In the after-treatment opium in any form should absolutely never be used except to relieve pain—even then most tentatively and with the belief that under any circumstances it is an agent of extreme danger after abdominal operations, and to be dispensed with at the earliest opportunity after the pain for which it has been administered has been relieved by salts or otherwise.

Rectal alimentation is indicated during the first few days after extensive bowel wounds have been repaired.

At the very first sign of oncoming peritonitis active saline or mercurial laxatives are imperatively indicated. If the symptoms are slow of development we may be content with the administration of minute doses of calomel or calomel and podophyllin (⅛ gr. each) every twenty minutes or half hour; but if they burst forth suddenly and are not thought to be due to the giving way of a repaired wound, then our purging should be progressive and powerful. Under these latter circumstances reopening of the wound, irrigation and perhaps the repair of an accident will sometimes be required in conjunction with the administration of the salts.

GUNSHOT WOUNDS.

The tables show a total of 110 cases of section for perforating gunshot wounds by 84 surgeons, with 36 recoveries and 74 deaths—a mortality of 67.27 per cent. Sixty-eight American surgeons operated upon 94 cases with a mortality of 68 per cent., and 16 foreign surgeons operated upon 16 cases with a death-rate of 62 per cent. Four times the abdomen was laid open after penetration of the peritoneum had been proved and no visceral wounds were discovered. All of these recovered. Eight times intestinal perforations were overlooked at the time of operation and subsequently found post-mortem. Thirty-one cases died of peritonitis; 14 of shock and prolonged operation; and 14 of primary and 4 of secondary hæmorrhage. Wounds of the liver are reported in 15 instances: of these 9 died—most of them apparently of hæmorrhage or other complication. Once the liver was extensively sutured, and with success. In 12 cases no special treatment was directed to the liver wound; 5 recovered and 7 died. Twice the wound was packed with gauze, both patients perishing.

The suggestion which first came to me through Dr. Mordecai Price, of this city, to first separately drain wounds of the solid viscera by tubes running through the track of the ball or knife, seems to be a very good one. Several of the recorded cases would certainly have thrived better if they had been so treated.

In 5 cases the kidney was perforated by the ball. For this complication no special treatment was attempted in 2 cases and both promptly died. Three times nephrectomy was performed, the only recovery being that of Dr. M. Price of Philadelphia. In one case the spleen was traversed and was treated by the actual cautery. This case perished from the effects of the violent primary hæmorrhage. Excision of the intestine was done 13 times in 11 cases, but without a single recovery. Twice the bladder was perforated by a ball in conjunction with other visceral lesions. Numerous intestinal perforations were once found complicated by intussusception. One case presented, in addition to several bowel wounds, well-marked tubercular peritonitis, but recovered perfectly not only from his gunshot wounds but also from the peritoneal tuberculosis.

STAB WOUNDS.

Of stab wounds 79 cases are recorded. These were operated upon by 53 surgeons with 48 recoveries and 31 deaths—a mortality of 39.34 per cent. Thirty-seven American surgeons operated upon 61

cases with a mortality of 47 per cent., and 16 foreign operators did 18 sections with a mortality of 11 per cent.

This table will be found to include 3 cases which were gored by animals, and one instance each of injury from the following causes: falling through pane of glass; flying splinter of wood; flying fragment of iron; falling upon circular saw.

The chief causes of death were: peritonitis, 7; overlooked wounds, 5; shock and prolonged operation, 2; primary hæmorrhage, 7; secondary hæmorrhage, 1. Eighteen cases were opened and no peritoneal injuries found. Of these 2 died, 1 from opium poisoning, the other from causes not stated, but presumably an overlooked wound of intestine. Wounds of the liver are mentioned 9 times. In four of these the organ was sutured with catgut and 2 recovered; it was cauterized in one instance and packed with catgut in another, both dying; once it was successfully packed with gauze, and in 2 cases no treatment is mentioned. Once intussusception was found when no visceral injuries were present.

RUPTURE OF URINARY BLADDER.

Twenty-seven cases of operative interference for this injury are reported by 26 operators, yielding in 10 recoveries and 17 deaths, or a mortality of 62.9 per cent. Eight cases were operated upon by American surgeons with a death-rate of 75 per cent., and 19 cases by foreign operators with a mortality of 59 per cent.

The causes of death were: Uræmia from absorption of urinary products remaining long before the operation in the peritoneal cavity, 7; inefficient suturing of bladder wound, 2; impossible suture ditto, 2; peritonitis subsequent to operation, 4; secondary hæmorrhage from perineal wound, 1.

The average time of undertaking operation after receipt of injury is mentioned in 24 cases and is the same number of hours. Taking this fact in conjunction with the mentioned causes of death we observe that if these cases were operated upon early, and in a proper way, there would be a resultant death-rate of scarcely more than *nil*.

Of the special symptoms of ruptured bladder a few words should be said. The recorded cases prove that there is great need of more reliable signs of rupture of the organ than have hitherto been possessed. By actual experience it has been proved that untinged urine is not a positive sign that no rupture is present. So also with injection of the viscus with fluid. The withdrawal of many pints of clear or bloody urine, on the other hand, has proved a sign of infallible nature when present—which only too often it is not. Some time since, in an editorial upon the subject in hand (*Medical News*, October 6, 1888), I suggested the gentle introduction of hydrogen gas into the bladder as a test of its continuity or rupture, and cited a number of experiments which were made upon the cadaver to ascertain its effectiveness. These experiments, so far as the cadaver was concerned, were highly satisfactory, but no chance has yet occurred to myself or others to put it to trial upon the living body. The method of experimentation was to introduce a catheter into the intact bladder and then to gently distend it with the gas under moderate pressure. The organ would at once rise into the abdomen and make itself apparent by tumefaction and unwonted percussion resonance just above the pubes, but the percussion resonance of the remaining portions of the abdomen would continue normal. If now the point of the catheter was made to perforate the bladder wall at any point, the gas at once escaped into and distended the whole abdominal cavity, producing universal tympany and absence of the before present liver dulness. It is further possible that this test might prove extraperitoneal ruptures by giving rise to emphysema of the surrounding cellular tissue, but of this I have not had sufficient evidence to speak with precision.

RUPTURE AND CONTUSION OF ABDOMINAL VISCERA.

Of these injuries 18 cases are tabulated, and of them 2 recovered and 16 died—a mortality of 88.8 per cent. These include: rupture of intestine, 11 cases; contusion and ecchymosis of viscera, 3 cases; rupture of gall bladder, 1 case; rupture of liver, 1 case; and rupture of spleen, 2 cases. The time of operation after injury is mentioned in 12 cases and averages forty-eight hours. The causes of death were: Peritonitis from delay, 10 cases; hæmorrhage, 3; overlooked wounds, 2; impacted gall stone, 1 case. One case which is marked "recovered" was a rupture of intestine operated upon very shortly after its occurrence by Mr. Croft, of London. The patient recovered perfectly with an artificial anus, but died almost immediately upon conclusion of the operation for its relief a month afterwards. The only ultimately successful case was one where simply contusions of the viscera were found when the abdomen was opened, but which had presented all the conventional signs of intestinal rupture before exploration. Twice resection of the bowel was performed as a primary measure and both resulted fatally. Twice also artificial ani were made and one recovered but, as mentioned above, only to miserably perish from the subsequent operation for its closure. In the case of ruptured gall bladder that viscus was dissected out after ligation of the cystic duct, but the patient shortly afterwards dying of cholæmia, it was found, post-mortem, that at the time of rupture a large calculus had been forced into the hepatic duct, totally obstructing it and causing death. Twice the spleen was excised and in each instance was followed by speedy death due to the effects of the frightful primary hæmorrhage.

TABLE I.—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
1	A. R. Kinloch, No. Car. Med. Jour., 1882, x, 1.	Adult	11 hours	Slight shock; general abdom'l pain; pain in sacral region; hole in rectum.	Much blood and fæces; 5 perforations of intestine, 2 of mesentery; rectal wound could not be found.	Trimmed, and sutured with Lembert's stitch; drain.	Died in 16 hrs.	Post-mortem: another intest. wound found.
2	Kocher, Corresp. für Aertze, 1883, No. 23.	14	3 hours	Collapse; signs of peritonitis.	Much blood; wound of large curvature and fundus of stomach 1½ inch.	Sutured	Recovered.	
3	Jordan Lloyd, Brit. Med. Jour., 1883, i, 560.	19 F.	48 hours	Little shock; no vomiting; later constant vomiting and peritonitis.	Much stinking brown fluid; ragged wound of small intestine ¾ in. in diam.	Intestine stitched to abdominal wound.	Died in ½ hr.	Post-mortem: mesentery perforated; contusion of bladder.
4	W. Watkins Seymour, N. Y. Med. Jour., 1886, xliv, 209.	15	13 hours	No shock at any time, vomited; some pain down left sciatic nerve.	Acute peritonitis; 3 lines of colon destroy'd; 2 wounds of meso-colon; thickened duodenum.	All approximated with Lembert sutures.	Died in 21 hrs.	Post-mortem: wounds in good condition; no others found.
5	C. A. Jersey, Med. Record, Oct. 16, 1886.	44	20 hours	Much shocked; pain and tenderness of abdomen.	4 wounds of sm. intestine; 2 perforations of mesentery; abrasion of mesen'y	All w'nds, except the abrasion, stitched with Lembert sut.	Died in 19 hrs.	Post-mortem; mesenteric wounds; sloughing, and bathed with pus.
6	T. Annandale, Lancet, 1885, i, 740.	15	1 hour	General shock; slight pain in abdomen and pelvis.	Considerable blood; 5 w'ds. of small int., 2 in colon, 2 in rectum; wound of mesentery.	All closed with Lembert sutures.	Died in 24 hrs.	Walked 100 yards after injury; post-mort.; wounds firm; no others found.
7	F. S. Dennis, Med. News, '86, xlviii, 225-253.	23	. . .	Great shock.	Much blood; wound of liver and its great vessels.	None; abdomen rapidly closed.	Died in 48 hrs.	
8	F. S. Dennis. Ibid.	26 F.	. . .	. . . . .	Much blood; 7 wounds of intestine, 1 of mesentery; uncontrollable hæmorhage from iliac veins.	Wounds sutured . .	Died in 48 hrs.	Post-mortem: abdominal cavity filled with blood.
9	A. V. Park, Chicago Med. Journ. and Ex., 1885, li, 412.	16	22 hours	Abdomen tympanitic; no liver dulness.	Great quantity of blood; ½ inch wound, also groove in small intestine.	Lembert sutures to groove and perforation.	Died in 15 hrs.	Post-mort.: few clots; peritonitis; contused wound of rectum.
10	Wm. T. Bull, Med. News, 1885, i, 171.	22	17 hours	Vomiting; pain; tenesmus; involuntary micturition.	5 wounds of small int.; 1 wound of sigmoid flexure.	Lembert sutures to all.	Recovered.	Ball found among intestines.
11	E. & E. W. Andrews, Journ. Am. Med. As., 1885, p. 177.	Adult	. . .	Vomited much blood; diffused tenderness of abdomen.	Considerable bloody serum only.	. . . . .	Recovered.	
12	John B. Hamilton, Jour. Am. Med. As., 1885, ii, 202.	19	. . .	. . . . .	11 wounds of small intestine, 2 of colon; omentum and mesentery wounded.	Lembert sut. to int.; wounds ligatured, and removal of injured portion of omentum.	Recovered.	Pelvic suppuration; hæmatocele evacuated through rectum on twelfth day.
13	T. G. Richardson, N. O. Med. and Surg. Jour., 1886, xiii, 867.	Adult	9 hours	Great shock; vomiting; signs of incipient peritonitis.	3 tears of intestine, 1 of mesentery.	All sutured	Died in 14 hrs.	
14	A. C. L. Ramsay, Northwestern Lancet, '85, iv, 377.	7	6 hours	Great pain; much vomiting.	Much blood; extensive w'nd of duodenum; contusion of colon.	Excision of gut, including wound; Lembert sutures.	Died in 1 hr.	
15	Wm. T. Bull, Med. News, 1886, xlix, 601.	24	6 hours	Severe abdom'l pain; shock; vomiting; diminished liver dulness; fluid in abdominal cavity.	2 wounds of small intest., 2 of transverse colon; extravasation into meso-colon.	All sutured by Lembert's method.	Died in 8 hrs.	Post-mortem: nothing more than above.
16	Wm. T. Bull, Med. News, 1886, xlix, 524.	57	12½ hours	Shock; vomiting; scarce any pain.	Great amount of blood; left lobe of liver almost divided.	None; abd'n closed.	Died on table.	Post-mortem: no other wounds found.
17	Wm. T. Bull, Med. News, 1886, xlix. 524.	25	2½ hours	Nausea; abdomen appeared normal; only vicinity of wound tender.	2 wounds of small intest.; 3 tears of peritoneum of meso-colon; omentum and anterior epiploic appendages torn and bleeding.	Lembert sutures to intestinal wounds; omentum and appendix excised.	Recovered.	
18	Abbe, Med. News, 1886, xlix, 524.	53	3½ hours	Slight shock; vomiting; rapid and increasing abdominal pain; tympany.	4 wounds of sm. intestine; wound between bladder and rectum. Much subperitoneal extravasation.	All approximated with Lembert's suture.	Died in 9 hrs.	Walked two squares after injury. Post-mort.: purulent peritonitis; ball found in bladder.
19	F. J. Lutz, Weekly Med. Rev., 1886, 514.	21	10 hours	Right side of abdomen tympanitic; left side dull.	7 wounds of sm. intestine; 4 wounds of mesentery.	Lembert's suture; ligature to mesenteric artery.	Died in 3 days.	Post-mortem: purule't peritonitis; wounds in good condition.
20	Mackeller, Lancet, 1887, i, 37.	23	30 hours	Some shock; no evidence of wound of bowel; next day peritonitis.	2 wounds of lower portion of sigmoid flexure.	Wounds could only be ligated.	Died in a few hours.	Post-mortem: no other wounds; bullet between rectum and bladder.
21	C. B. Nancrede, Phila. Acad. of Surg., 1886.	. . .	. . .	At first little pain or shock; later copious bloody vomiting.	Perforation of anterior and posterior walls of stomach; two large perforations of duodenum.	Lembert sutures; "cleansing."	Died in 3 days.	No post-mortem.
22	T. G. Morton, Trans. Phila. Co. Med. Soc., 1887.	36	1½ hours	Some pain; no shock; vomited blood copiously.	4 wounds of stomach, 1 of transverse colon; omentum much lacerated.	Lembert sutures to all.	Died in 6 hrs.	Post-mortem: wounds & abdomen all right; large hæmorrhage (1½ pints) into left pleura from cut intercostal artery.
23	John I. Skelly: Ann. Surgery, 1887, vi, 49.	21	1 hour.	Unbearable abdomin'l pain; wound midway between umbilicus and iliac spine; free bleeding from it.	Entrance and exit wound of peritoneum. Much venous blood in cavity from entrance wound. Well-marked tubercular peritonitis present.	Dusted with iodoform; cavity cleansed.	Recovered.	Ball not found; was imbedded in perispinal tissues.

TABLE I—*Continued.*—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
24	T. A. McGraw, Med. Rec., '87, xxxii, 233.	24 F.	9 hours	Pain in right iliac and lumbar regions and epigastrium.	Two perfor. ascending colon; extravasation of fæces.	Wounds united by continuous suture; abd. washed out.	Recovered.	. . . . .
25	A. R. Kinloch, Med. News, '87, ii, 66.	27	2½ hours	Condition good.	Four perforations of ileum, two of jejunum; mesentery torn and perforated in two places; bleeding from mesenteric artery; much free blood in cavity.	All wounds closed by Lembert sutures; cavity cleans'd and irrigated, no drain.	Died in 48 hrs.	Post-mortem; general peritonitis; half pint sanguinolent fluid in cavity.
26	J. H. Packard, Med. News, '87, i, 339.	33	2 hours	Marked collapse; sanguinolent vomit.	Eleven wounds in small intestine; omentum torn and bleeding; wound of extern. iliac vein beneath Poupart's ligam't; much blood in cavity.	Excision of 1 inch of small intes.; Lembert sutures to other wounds; ligat'n of external iliac vein; peritoneum cleansed; rubber drain.	Died in 15 hrs.	Post-mort.: evidences of peritonitis; ball found in contact with shaft of femur.
27	C. Kollock, Med. News, '87, i, 480.	15	6 hours	Deep-seated emphysema about ball w'nd; hepatic resonance; thirst & some shock; bloody stools; fæcal extravasation thro' ball wound.	Two perforations descending colon, one of ilium; bleeding epiploic appendage; much extravasated blood and fæces.	Lembert sutures to wounds; epiploic appendage ligated and cut off; abdomen cleansed.	Recovered.	. . . . .
28	T. Billroth, Report of Klinik 1886 by R. von Hacker.	63 F.	32 hours	Collapse; vomited blood; belly swollen and tender; wound in seventh intercostal space below nipple.	Two wounds stomach near greater curvature; much clotted blood in cavity.	Transverse incision 6 in. long linea alba to 6th rib; 7th and 8th ribs exsected; Lembert sut. to stomach w'nds abdomen cleansed; drain; ball not found.	Died in 30 hrs.	Post-mortem: ball had wounded liver and aorta and lodged in right kidney, peritonitis and pleuritis present; vomiting had kept up continuously.
29	J. M. Gaston, Med. & Surg. Reporter June 12, '86, 739.	30	4 days	Continued extreme shock from time of accident until operation.	No visceral wound; considerable decomposing serosanguinolent fluid in cavity.	Seven punctures int. to let out gas; Lembert sutures to each of these; abdomen cleansed; drain.	Died.	Post-mortem: no visceral wound; ball could not be found.
30	Pozzi, Review de Chir., '87, i, 78.	13	8 hours	Vomiting; bloody urine; vesical symptoms most urgent.	Urine in peritoneal cavity; 3 perforations and 3 contusions of intestine; w'nd of bladder.	Partial resection of gut; 29 Lembert sutures to wounds; drainage.	Died in 52 hrs.	. . . . .
31	W. W. Keen, Med. News, May 14, '87	18 F.	8½ hours	Wound in right hypochondrium, fracturing ninth rib; pale and weak; tenderness of abdom'n; had vomited some clear blood.	Wound of pylorus, 2d w'nd posteriorly; also, tear superior mesenteric vein and extravasation into mesentery; anterior border of liver "scalloped" by ball; 1½ inch wound small intestine; left kidney lacerated.	Wounds of stomach and int. closed by Lembert sutures; mesenteric vein ligated, also branch mesenteric artery; torn kidney removed; abdomen washed out.	Died in 14 days.	Albuminuria after operation; also vomiting and rigors; abdomen partially reopened 12 days after operation. Post-mortem: all wounds in good condition; gangrene of intest. and mesentery opposite wound of gut, which had healed.
32	Isaac Warren, N. Y. Med. Journal, Sept. 17, '87, 325.	18	24 hours	Tendency to vomit; shock; symptoms of peritonitis.	Five perforations small intestine, 2 of mesentery; general peritonitis well advanced.	Lembert sutures to wounds; abdomen washed out; rubber drain.	Died in 14 hrs.	No post-mortem; time of operation 1¾ hrs.; died of peritonitis.
33	C. K. Briddon, Med. News, '87, i, 52.	F.	18 hours	At first shock and vomiting, next day slight tympanites; primary symptoms continued.	Two wounds of stomach, 1 of omentum.	Lembert sutures to wounds; cavity cleansed; gauze packing left in.	Died in 36 hrs.	Post-mortem: general peritonitis; 4 overlooked wounds of jejunum discovered; time of operation, 2 hours.
34	Jos. M. Fox, Med. News, Nov. 12, 1887, 568.	18	3½ hours	Condition fair; slight fulness of abdomen; dull pain in umbilical region.	Four perforations of colon and jejunum; tear of omentum and of mesentery; considerable free blood; no extravasation; recent intussusception of ilium.	Wounds closed by Lembert sutures; belly cleansed; invaginat'n reduced.	Recovered.	Time of operation, 1 hour and 10 minutes.
35	Durante, Tr. Acad. Medicine, Rome, June, 1887.	Adult	. . .	Gunshot wound of abdomen.	One perforation small intestine.	Wound closed by Lembert sutures.	Recovered.	. . . . .
36	G. S. Brown, Med. News, Feb'y 18, 1888, 180.	32	12 hours	All signs violent peritonitis; condition fair; penetration proved.	Six ozs. bloody serum in cavity; no visceral w'nds; intense peritonitis; ball not found.	Large irrigations; drainage.	Recovered.	Drain removed on 10th day.
37	Richard Douglas, N. Y. Med. Jour., June 9, 1888, 631.	Adult	8 hours	Profound shock; great pain; tympany; vomiting.	Four wounds small intestine, 2 of colon; extravasation of fæces; much free blood.	Lembert sutures to wounds; abdomen cleansed; no drain.	Died in 50 hrs.	Died of septic peritonitis; no post-mortem record.
38	Charles T. Parkes, Annals Surgery, Nov., 1887.	Adult	5 hours	Moderate collapse; much vomiting.	Five perforations of intestine; kidney (left) perforated and torn.	Perforations closed; kidney not removed.	Died in 24 hrs.	Died from hæmorrh. from torn kidney.
39	Charles T. Parkes, Annals of Surgery, Nov., 1887.	45	17 hours	Fæcal matter in w'nd; respir-thoracic; belly walls hard and motionless.	Large perforation of small intestine; bullet not located; large quantity of foul ichorous serum.	Closed by continuo's suture; free boric irrigation.	Died in 16 hrs.	Died of shock and septic poison.

TABLE 1—*Continued.*—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
40	DeForest Willard, Trans. Am. Surg. Ass'n, Sept., '88.	17	4 hours	Moderate shock; later intense shock and signs of hæmorr.; passed by urethra 12 ozs. pure blood; pain in back and left side; whole lumbar and inguinal regions absolutely flat upon percussion.	Immense extra-peritoneal hæmatocele extending upwards to left kidney; kidney centrally traversed and torn; small amount bloody serum in cavity.	Nephrectomy; removal of hæmatocele; thorough irrigat'n.	Died in 68 hrs.	Urine albuminous after operation; peritonitis; incessant vomiting later; no sympt. of uræmia.
41	Sevastopoulo, Bull. et. Mem. de la Soc. de Chir., xiii, 1887, 273.	30	1 hour.	Cold and pale; fæces flowing from wound.	Large oval wound small intestine; quart of blood and clots in cavity.	Resect'n of wounded int. and invagination of ends; cavity irrigated.	Recovered.	. . . . .
42	W. Bolles, Boston Med. and Surg. Jour., Oct. 18, '88, 377.	F. 34	6 hours	Shock; vomiting.	1 wound stomach, 2 of jejunum, 2 of transverse colon; free blood and traces of fæces.	Wounds closed by suture.	Died in 6 hrs.	Post-mortem: abdm'n and wounds in good condition.
43	Cupples, Daniels' Texas Med. Jr., vii, 10-163.	F. 21	1½ hours	Great hæmorrhage; patient very weak.	4 wounds small intestine; much free blood.	Wounds sutured. . .	Died in 5 hrs.	Never reacted.
44	Roswell Park, Med News, August 4, 1888, 116.	32	6 hours	Severe shock.	2 wounds small intestine; 1 of mesentery; large amount of free blood.	Sutured; irrigation.	Died in 53 hrs.	Rallied well; died of ac. pericarditis; no peritonitis; w'ds healed.
45	N. P. Dandridge, Trans. Am. Surg. Ass'n, 1887, 216.	57	19 hours	Little pain; no distension or vomit at first; later, peritonitis and vomiting; shock.	10 wounds small intestine.	W'nds sutured; cavity irrigated.	Died in 43 hrs.	Post-mortem: wounds all firmly closed.
46	F. Lange, Medical News, 1887, 630.	14	24 hours	No shock; some tympanites; no pain; tenderness.	7 wounds small intestine.	Wounds sutured. . .	Recovered.	. . . . .
47	Priddy, Jour. Am. Med. Ass'n, 1887, 640, ix.	60	108 hours	Profound shock; great abdomin'l pain; hiccough, but no vomit; rode four miles on horseback after accident.	Lacerated wound of colon 6 in. long; wound of mesocolon, mesentery and of jejunum; quantity bloody serum and pus in cavity.	Wounds sutured; drainage and iodoform packing.	Recovered.	Almost died on table; time of operation, 35 minutes.
48	E. Andrews, Chicago Med. Jour. & Exam., Aug., '87.	F. Adult	16 hours	Evidences of peritonitis; waited for Symptoms.	1 intestinal wound; much bloody serum; intestines injected and adherent.	. . . . .	Died.	No post-mortem.
49	Trelat, Gazette d' Hosp., April 16, 1888.	F. Adult	22½ hours	Shock; meteorism.	2 wounds small intestine.	Lembert sutures . .	Died in 20 hrs.	Post-mort.: heart and liver very fatty, lungs congested.
50	Labbé, Revue de Chir., April, '88.	29	15 hours	Collapse.	10 wounds ilium, 1 of mesentery; 1½ quarts free blood and fæcal matter in cavity; peritonitis had begun.	Wounds sutured, cavity well irrigated.	Died in 20 hrs.	. . . . .
51	C. E. Case, Med. News, Sept. 24, 1887, 379.	Adult	. . . . .	. . . . .	2 wounds intestine; considerable am't free blood.	. . . . .	Recovered.	. . . . .
52	M. Pickett, Med. Press, West. N. Y., '86, i, 247.	13	. . .	No shock	No visceral lesion	. . . . .	Recovered.	. . . . .
53	C. H. Dalton, Ann. Surg., Feb., 1889.	29	3 hours	Vomiting from time of accident; intense pain in epigastrium; successful hydrogen test.	15 perforations small intestine.	Two excisions of intestine 3 in. each; remaining wounds closed by Lembert Suture.	Died in 1 hr.	Time of operation, 3 hours.
54	M. Price, Trans. Penn. State Med. Soc., 1888, 200.	F. 14	24 hours	Condition alarmingly bad; large amounts blood passed from bladder; symptoms of peritonitis well marked.	Anterior portion of liver perforated by ball; also large hole through upper portion of right kidney; much free blood and clots.	Right kidney removed; irrigat'n, glass drain; no treatm't directed to liver wound.	Recovered.	Several absc's of liver formed subsequently and were opened or discharged spontaneously; convalescence tardy.
55	J. B. Murphy, Jour. Am. Med. Ass'n, 1888, x, 290.	26	4½ hours	Little shock; no pain.	11 perforations of intestine; much blood.	Double continuous catgut suture to w'nds: abd. cleansed; no drain.	Died in 36 hrs.	Post-m.: great hæmorrhage into periton'm from divided ren. artery; no peritonitis.
56	J. B. Murphy, Ibid, 291.	22	2 hours	Some shock; dulness in lower abdomen.	Large perforation ant. lobe of liver; much free blood; hæmorrhage had ceased.	4 pints blood removed; abd. cleansed; no drain.	Recovered.	. . . . .
57	J. B. Murphy, Ibid.	57	2 hours	No shock	Perforation of liver and of transverse colon; fæces and blood in cavity.	Continu's catgut sut. to bowel wounds; abd. irrigated.	Recovered.	. . . . .
58	J. B. Murphy, Ibid.	26	8 hours	Had walked 2 miles after accident; profound shock.	2 wounds of stomach, 1 of liver, 1 of mesentery; extravasation of food.	W'nds united by continuous catgut sut.; cav. washed; rubber drain.	Died in 18 hrs.	Given ½ gr. morph. by mistake after ope'n; marked opium poisoning; post-m.: negative.
59	A. E. J. Barker, Brit. Med. Jour., Mar. 17, 1888, 571.	23	3½ hours	Some shock; tenderness of abdomen.	Abrasion of liver; extensive tear of omentum; ball found in omentum.	Abdomen cleansed and freed of clots.	Recovered.	. . . . .
60	A. E. J. Barker, Ibid.	37	4½ hours	Condition good; no shock.	2 perforations of intestine; free blood.	Excis'n and circular continuous sut. of 1 inch of intestine; abdomen cleansed.	Died in 6 days.	Post-m.: "hypostatic" pneum.; blood-stained serum in per. cav.; excis'n result perfect.
61	N. B. Carson, St. Louis Cour. Med., March, 1887.	25	6 hours	Condition good. . . .	Perforation sm. intestine and of mesentery.	Resection 2½ in. intestine; unable to cleanse cavity.	Died.	No post-morten.
62	F. W. Parham, New Orleans M. & S. Jour., '86-'7, N. S., xiv, 508.	34	2 hours	Considerable shock . .	Perforations of small intestine, ascending colon and bladder.	Suture of wounded viscera.	Died.	. . . . .

TABLE 1—*Continued.*—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
63	F. W. Parham, Ibid.	22	3 hours	Much shock.	Wounds small intest. and external iliac artery.	. . . . .	Died.	. . . . .
64	J. W. Heddens Trans. Med. As'n Missouri, '86, 43.	30	. . .	Great pain in right side, shoulder and back; dyspnœa.	Perforation of liver; some free blood; piece of cloth in cavity.	Blood, etc., removed; abdomen cleansed.	Recovered.	. . . . .
65	T. H. Manly, Med. News, Sept. 24, 1887.	39	2 hours	Distension of abdom'n by fluid; weak.	2 wounds descending colon, 1 of mesentery; bleeding mesenteric artery.	Perforations closed by Lembert suture; drainage.	Recovered.	. . . . .
66	V. G. Thorpe, Lancet, 1888, ii, 1118.	F. 39	30 hours	Collapse; peritonitis.	Gas in cavity.	Not mentioned. . .	Died 28 hrs. after op.	Post-mort.: large am't blood in cav; 2 perfor. stomach; patulous divided superior mesenteric artery.
67	C. E. Bell, Brit. Med. Jour., Mar. 16, 1889, 589.	18	2 hours	Sh'ck; pain over whole abdomen; vomited contents of stomach.	7 perforat'ns sm. intestine.	Lembert sutures; abdomen cleansed.	Recov.	. . . . .
68	D. V. Dean, Records St. Louis City Hosp., Jour. Am. Med. Ass'n, Nov. 5, '87, 579.	16	. . .	Condition very bad . .	Wound of intestine	Suture of intestine; cleansing of abdomen.	Died.	. . . . .
69	H. H. Mudd, Jour. Am. Med. Ass'n, Nov. 5, '87, 579.	17	3 days	Condition good	Wound of liver and of stomach.	Gastric wound sutured.	Died.	Post-mortem: peritonitis; no other w'nds.
70	David Prince, Jour. Am. Med. Ass'n, Nov. 5, '87, 579.	30	1 hour.	Condition good; intense abd'l pain.	Wound of ascending colon.	Sut. of colon wound.	Recov.	. . . . .
71	David Prince, Tr. Am. Surg. Ass'n, 1887, 213.	Adult	6 hours	Shot in several places by a mob.	5 wounds of intestine, 2 of bladder; ball emerged thro' sacrum; fæcal extravasation.	W'nds sutured; partial irrigation.	Died in 12 hrs.	Peritonitis; no post-mortem record.
72	Link, Miss. Med. Ass'n, 1887, also Trans. Int. Cong. 1887, i, 543.	11	Soon.	Abdomen penetrated by small fragment of percussion shell.	4 perforations of ilium, 2 of mesentery.	W'nds sutured; foreign body removed from mesenteric fold.	Recov.	. . . . .
73	W. S. Rodman, Am. Pract. and News, Mar. 31, '88, 196.	20	2 hours	Great pain and shock.	2 wounds and 1 abrasion small intestine, wound of liver (large); bleeding branch superior mesenteric; much free blood in cavity.	Intestine sutured by continuous method; no drain.	Died in 23 hrs.	Post-mort.: injection of bowels and tympany.
74	W. O. Roberts, Am. Pract. and News, 1888, vi, 5.	37	2 hours	Emphysema of area of hand around entrance w'nd; shock; later, tympanites; peri-umbilical pain.	4 wounds of colon	Wounds sutured; irrigation; drain.	Died in 60 hrs.	Post.mortem: peritonitis; drain had not worked; drunkard.
75	Henry Sherry, Annals Surg., 1888, viii, 257.	19	. . .	Abdomen tympanitic.	3 perforations of colon; fæcal and bloody extravasation.	Continuous suture of wounds; irrigat'n, drainage.	Recov.	. . . . .
76	S. T. Armstrong, Report U.S. Mar. Hospital Service, 1886, 133.	26	3 days.	Weak; abdom'l pain; some shock; belly tender and swollen.	Marked advanced peritonitis; no visceral lesions found.	Drain tube	Died in 60 hrs. af. op'n	Post-mortem: peritonitis; wound of liver; much free blood.
77	C. A. Wheaton, N.-Western Lancet, March 1, '89, 57.	Adult	2 days.	Rode 5 miles on horse; back after injury; gen'l peritonitis and sinking rapidly.	Large wound ascending arch of colon; notch of liver border; wound of kidney.	Wound sutured. . .	Died in 1 hr.	Post-mortem: another wound of post-wall of colon found.
78	Ohage, N.-Western Lancet, March 1, 1889, 58.	21	7 hours	Great pain, vomiting of blood and food, but condition fair.	2 perforations of stomach, large hole thro' spleen, much blood; perforation of diaphragm.	Gastric wound sutured; cautery to splenic wound.	Died in a few hours.	Post-mortem: another wound of stomach discovered.
79	Baudens, Guenther Opr. Chirurg., A, iv.	Adult	. . .	. . . . .	Fæcal extravasation; w'nd of transverse colon.	Intestinal wound sutured.	Recov.	. . . . .
80	Baudens, Plaies d'Armes é few.	Adult	. . .	Ball entered at umbilicus and came out at quadratus lumborum.	2 w'nds of intestine, one of them completely destroying surrounding bowel.	Eight inches intestine resected; Lembert sutures.	Died 31 day.	No post-mort. record.
81	F. J. Lutz, Annals Surg., vii, '88, 91.	30	3 hours	Condition good; resonance over hepatic region.	4 wounds small intestine, 6 of mesentery; profuse hæmorrhage.	Lembert sut.; peritoneum cleansed.	Died in 4 hrs.	No post-mort. record.
82	Newell, Brit. Med. Jour., Feb. 25, 1882, 260.	Adult	Next day.	Abdomen tympanitic; no liver dulness; shot-gun injury at short range.	½ inch wound, also groove of small int.; much blood.	Wads and pieces of clothing removed.	Recov.	Passed 29 shot per anam next day.
83	M. Freger, Deut. Med. Woch., July 15, 1886.	19	6 hours	Patient collapsed . . .	Injury to small intestine. .	Intestine resected. .	Recov.	. . . . .
84	A. C. Bernays, Pittsburgh Med. Rev., April, 1888.	11	19 hours	Wound posterior, midway between ilium and last rib.	1 wound small intestine; bullet lodged in mesentery; piece of cloth removed from peritoneum; much blood.	Lembert sutures; abdomen cleansed; no drain.	Recov.	. . . . .
85	A. C. Bernays, Ibid.	F. 9	1 hour.	Condition good; shot with large bird shot.	3 perforations of ascending colon; 3 shot in lumen of colon; extravasation of blood and fæces	Lembert sutures; abdomen cleansed; no drain.	Died in 3 days.	No post-mortem.
86	H. C. Dalton, Ann. Sur., '88, viii, 100.	22	2 hours	No shock, pain or vomiting; condit'n good.	2 perforations stomach, 1 of left lobe of liver; considerable hæmorrhage.	Silk Lembert sutures to stomach; large catgut sut. to liver.	Recov.	. . . . .
87	J. D. Griffith, Ann. Sur., '88, viii, 100.	26	6 hours	Considerable shock	3 perforations small intestine; clots in cavity.	Lembert sutures . .	Died.	Post-mortem: nothing more found.

TABLE I—*Continued.*—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
88	J. D. Griffith, Ann. Sur., '88, viii, 100.	21	8 hours	Intense shock.	11 wounds small intestine, 2 of colon; 2-inch wound pyloric end of stomach; very great extravasation of food.	Graft from meso-colon stitched into stomach w'nd; 122 Lembert sutures.	Died in 11½ hrs	Could not approximate stomach w'nd without producing pyloric stenosis; time of operation, 4½ hrs.; did not come out of shock.
89	O. Halbert, Trans. Texas State Med. Ass'n, 1886.	21	. . .	. . . . .	W'nd of liver; much blood in cavity.	Abdomen cleansed.	Recov.	. . . . .
90	C. Fenger, Journal Am. Med. Ass'n, 1888, ii, 83.	50	6 days.	Upon admission, slight shock; *unsuccessful complete hydrogen test;* on 6th day gradual collapse & signs of peritonitis.	No visceral wounds found; large amount milky purulent fluid with fæcal odor in cavity.	Abdomen partially irrigated; drain.	Died 8 hrs. after op.	Post-mortem: number of localized periton. abscesses; intestines congested; no perforations or visceral wounds found.
91	C. Fenger, Ibid.	23	3 hours	Much shock; successful hydrogen test; blood from rectum.	14 perforations small intestine, 2 abrasions of bowel, 4 wounds of mesentary; great quantity of free blood in cavity.	2 resections of intestine; Lembert sutures to w'nds; gas insufflat'd to prove work, etc.	Died on table.	Duration of operation, 2½ hrs.; transfusion at end. Post-mort.: another wound (near pylorus) discovered.
92	W. L. Schenck, Jr. Am. Med. Ass'n, Oct. 13, '88, 521.	49	16½ hours	Much shock and exhaustion; successful hydrogen test.	9 perforations of small intestine, 1 of mesentery.	Lembert sutures; abdomen cleansed.	Died in 2 hrs.	Time of operation, 3½ hours.
93	A. P. M. Vance, Pittsb. Med. Rev., 1888, 63.	17	1 hour.	No blood from bladder before operation; great shock.	6 large wounds small intestine, blood, etc.	Wounds closed by continuous suture; drain.	Died in 95 hrs.	Post-m.: ureter divided by ball; blood in urine after operat'n.
94	A. B. Strong, Pittsburgh Med. Rev., 1888, 206.	20	20 hours	Shock; collapse. . . .	4 perforations small intestine; cavity filled with blood; violent hæmorrh.	Wounds sutured; cavity cleansed; drainage.	Died.	Never rallied; no post-mortem record.
95	A. B. Strong, Pittsburgh Med. Rev., 1888, 206.	25	. . .	General peritonitis . .	No visceral wounds found.	No drain	Died.	No post-mort. record.
96	J. F. Summers, Jr., Pittsb. Med. Rev., 1888, 340.	38	24 hours	. . . . .	Wound of liver and of kidney; abd. full of blood.	Iodof'm gauze packing; abd. cleansed.	Died in 28 hrs.	Died from recurring hæmorr.; no post-mortem record.
97	J. M. Barton, Pittsburgh Med. Rev., 1888, 291.	F. 35	24 hours	Wound over stomach.	No visceral injury	Abdomen cleansed; drain.	Died in 20 days.	Died fr. sepsis spreading from ball track to peritoneum; post-m.: 2 w'nds stomach.
98	Wm. Mackie, Med. News, June 9, '88.	27	3 hours	Copious blood-tinged vomit; excrutiating pain referred to umbilicus; successful hydrogen test.	2 perforations of stomach; 2 of duodenum; 2 wounds of mesentery, 1 of meso-colon; profuse hæmor.	Wounds sutured; abdomen cleansed.	Died in 36 hrs.	Post-mort.: septic peritonitis; pint sanguinolent fluid in cavity.
99	N. Senn, Medical News, '88, ii, 202.	72	4 hours	Entrance wound in 6th left intercostal space space surrounded by emphysema; 7th rib fractured; bloody vomit; pain; partial collapse; successful hydrogen test.	1½ inch wound of greater curvature of stomach; also another perfor. of posterior wall (located by the gas); great hæmorrhage.	Lembert sutures to wounds; abdomen cleansed.	Died on table.	Post-m.: bullet passed thro' pancreas and spinal canal.
100	N. Senn, Medical News, Nov. 10, 1888, 528.	16	3 hours	Some shock; pain; signs of fluid in peritoneum; bullet passed in stool brought away by enema; successful hydrog. test.	10 perforations of small intestine, 4 of mesentery, 1 of anterior portion of rectum; much free blood and food and fæcal extravasation.	Lembert sutures; abdomen cleansed; glass drain.	Recovered.	. . . . .
101	N. Senn, Ibid, 529.	18	12 hours	Immediate pain and shock; successful hydrogen test; beginning peritonitis.	5 perforations small intestine, advanced peritonitis, great am't free blood; intest. distended by blood clots 3 feet; 4 wounds of mesentery.	Lembert sutures to bowel; ligation of bleeding portions of mesentery *en masse*; irrigation; drain.	Died in 8 hrs. af. op'n	Post-mortem: general septic peritonitis.
102	C. Fenger, N. Am. Practioner, Feb., 1889, 85.	26	3 hours	No shock; no pain; negative air test.	None found	. . . . .	Recovered.	. . . . .
103	David Barrow, Jr. Am. Med. Ass'n, June, 18, '89, 835.	31	3½ hours	Great collapse; prolapse of omentum; fluid in peritoneum; gas from wound.	7 large perforations small intestine, 5 lacerations of mesentery; branches of superior mesenteric artery cut and bleeding.	W'nds sutured; vessels tied; irrigat'n.	Died in 3 hrs.	Died of shock from the prim'y loss of blood; no post-mortem.
104	Dav. Barrow, Ibid.	25	4 hours	Some shock, vomiting, condition fair.	9 wounds of small intest., several of mesentery; a quart of bloody fluid in cavity.	4 inches small intes. resected; wounds sutured.	Died in 15 hrs.	Spent an hour trying to return intes., then punctured them and let off flatus; no p.-m.
105	Dav. Barrow, Ibid.	29	6 hrs.	Very little shock . . .	None found	Irrigation.	Recov.	. . . . .
106	Dav. Barrow, Ibid.	25	13 hours	Little to indicate serious injury.	Wound through right lobe of liver; bile duct cut; hæmorr. from liver w'nd; much free blood and bile.	Liver wound packed with gauze; irrigation.	Died in 5 days.	No abdominal symptoms; died of cholemia; no post-m. rec.
107	O. H. Allis, unreported.	22	30 hours	Violent peritonitis and shock.	Wound thro' liver; ball imbedded in spine; violent general peritonitis.	. . . . .	Died in 24 hrs.	. . . . .
108	A. C. Bernays, N. Y. Med. Journal, May 4, 1889.	Adult	Soon.	. . . . .	Perforations of stomach, duodenum and jejunum.	. . . . .	Recov.	. . . . .
109	E. M. Moore, Jr., Med. Press, Western N. Y., April, 1889, 181.	47	8 hours	Some shock; unsuccessful air experim't.	5 perforations intestine, 1 of mesentery, 1 of omentum.	Exc'n of int. including 3 perf'ns; other w'nds sutured; irrigation; drain.	Died in 10 hrs.	Died of shock; operation lasted 3½ hrs.; post-mort.: nothing further.
110	C. K. Bridden, N. Y. Med. Jour., Mar. 9, '89, 255.	20	2 hours	Moderate shock; blood in urine.	15 perforations intestines.	Resection 1½ inches small int.; other wounds sutured.	Died in 36 hrs.	Oper'n lasted 3½ hrs.; post-m.: overlooked wound of bladder.

TABLE 2—STAB WOUNDS.

Case	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
1	G. Tiling, St. Pgb. Med. Woch., 1884, No. 24.	19	Soon.	Vomited much blood.	Much blood; 1½ in. wound of gut; curvature of stomach; wounds of omentum.	Lembert sutnres . .	Recovered.	. . . . .
2	W. O. Roberts, Am. Pract., 1884, xxix. 13.	44	A few hours	Considerable hæmor. from wound.	2 wounds of small intestine, 2 of mesentery.	All sutured	Recovered.	. . . . .
3	Barker, Lancet, 1886, i, 347.	Adult	3½ hours	. . . . .	Incised wound of omentum.	None	Recovered.	. . . . .
4	J. B. Roberts, Polyclinic, 1886, iii, 93.	F. 19	2 hours	Great shock, vomiting, violent pain.	2 wounds of small intestine.	Lembert sutures . .	Died in 2 days.	Post-m.: purul't peritonitis; one wound overlooked.
5	F. S. Dennis, Med. News, 1886, xlviii, 225-253.	22	. . .	. . . . .	2 incised wounds of small intestine—1 cut serous and muscular coats of intest.	Czerny-Lembert sut.	Recovered.	. . . . .
6	F. S. Dennis, Med. News, 1886, xlviii, 225-253.	57	3 hours	. . . . .	None found	None	Recovered.	. . . . .
7	F. S. Dennis, Med. News, 1886, xlviii, 225-253.	25	Next day.	Had been stabbed in hernia; hernia reduced; peritonitic symptoms next day.	2 large wounds of small intestine.	Resection of gut, including wounds.	Died in a few hours.	Post-mort.: resection all right; no other wounds.
8	F. S. Dennis, Med. News, 1886, xlviii, 225-253.	22	. . .	Considerable hæmor. from external w'nd.	5 wounds of small intestine.	Czerny-Lembert sutures.	Died in 40 hrs.	Post-mort.: wounds in good condition; no other wounds.
9	J. McF. Gaston, Med. and Surg. Rep., '86, liv, 739.	30	4 days.	Much shock; afterward acute peritonitis.	Brush burn of colon.	None	Died shortly	. . . . .
10	J. G. Brooks, Med. Herald, 1886, viii, 134.	11	A few hours	Great shock; abdomen tense and dull.	Great quantity of blood; cut and bleeding mesentery.	Vessels ligated . . .	Recovered.	. . . . .
11	W. S. Tremaine, Med. News, 1886, xlix, 601.	18	10 hours	Opium poisoning also; free bleeding from wound.	None	None	Died.	Admitted with opium poisoning, fr. which he died.
12	J. B. Roberts, unpublished.	40	¾ hour.	Violent abdom'l pain; prolapse sm. knuckle intestine; free hæm.	4 wounds of small intestine, 1 of colon; mesent'y transfixed.	All closed with Lembert sutures.]	Recovered.	. . . . .
13	Kwiecinski, Pregl lik. Krakow, '85, xxiv, 71.	20	At once.	Great pain; vomiting.	3 wounds of small intestine.	Sewed.	Recovered.	. . . . .
14	G. Gaulco, Genova, 1886. Due casi di enfer fer ferite di intestine.	30	. . .	Gored by cow.	No visceral wounds.	Abdomen cleansed .	Recovered.	. . . . .
15	G. Gaulco, Genova, 1886. Due casi di enfer. fer ferite di intestine.	30 F.	. . .	. . . . .	Wounds of intestines. . . .	Lembert sutures . .	Recovered.	. . . . .
16	Wunderlich, N. Y. Med. Jour., 1887, i, 68.	19	6 hours	. . . . .	¾ in. wound of gut—anterior curvature of stomach.	Lembert sutures . .	Died in 1 hr.	Post-mortem: wounds in good condition.
17	J. B. Deaver, Trans. Phila. Co. Med. Soc., Jan. 8, '87.	Adult	. . .	Much blood in peritoneal cavity; great shock.	Wound of spleen	Excision of spleen .	Died.	Post-mortem: wound of kidney, etc.
18	T. G. Morton, Ibid.	30	9 hours	Increasing pain about wound; also emphysema; no shock.	Wound of omentum, 1½ in.	Suture of omentum; ligature of bleeding omental artery.	Recov.	. . . . .
19	J. Avery, Med. Age, 1885, iii, 412.	Adult	7 hours	Much shock.	2 wounds of small intestine, 1 of mesentery.	Wounds trimmed, & Glover's suture introduced.	Recov.	. . . . .
20	Jos. M. Fox, Med. News, Nov. 12, 1887, 567.	32	3½ hours	Shock; much hæmorrhage.	Large bleeding wound of liver; much free and clotted blood.	Liver wound cauterised and hæmorr. stopped by actual cautery; cavity freely irrigated.	Died in 20 hrs.	Post-m.: everything in good order; died of loss of blood and subsequent shock.
21	T. G. Morton, Med. News, Nov. 26, 1887. 632.	F. 20	2 hours	Penetrating w'nd near umbilicus; slight abdominal pain; no other symptoms except protrus'n small piece of omentum.	None found; no blood . . .	Omentum washed and returned.	Recovered.	Insisted upon going home and attend'g to househ. duties next day; during convalt. was not confined to bed; no hernia in wound afterwards.
22	Burckhardt, Cent. f. Chir., No. 5, 1887.	25	. . .	Increasing collapse; percussion dulness of whole belly.	½ inch wound left lobe of liver, bleeding violently; was 2 inches deep; belly full of blood.	Liver wound packed wi. strips of gauze, abdomen cleansed, drainage.	Recov.	At end 8 weeks a lost strip of gauze presented and was removed; wound then ceased suppurating; sinus closed in 7 mos.
23	J. M. Barton, Phila. Med. Times, Ap. 6, 1888, 428.	25	4 hours	Venous bleeding from wound; shock from loss of blood.	Wound of anterior border of liver, ¾ in. wound transverse colon; free hæmorrhage from latter.	Lembert sutures to colon wound, nothing to liver—was not bleeding; abd. cleansed; no drain.	Recov.	. . . . .
24	Burckhardt, Jour. Am. Med. Ass'n, July 9, 1887, 62.	30	2 hours	Entire collapse; belly full of fluid.	Wound large curvature of stomach; great am't free clots and blood; very free bleeding from wound.	2 rows Lembert sutures.	Recov.	. . . . .
25	J. H. Parkinson, Sacramento Med. Times, April, '87, 62.	F.	2 hours	Much and repeated bloody vomit.	Extensive wound posterior wall of stomach; much free blood.	W'nd closed by Lembert sutures; uncontrollable deep bleeding; free irrigation.	Died in 15 hrs.	Post-m.: another w'nd of stomach found; also, perforation left renal vein.

TABLE 2.—STAB WOUNDS—*Continued.*

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
26	H. C. Dalton, Annals Surg., Feb., 1889, 91.	28	5 hours	Great agony; protrusion & strangulat'n ⅔ of stomach; copious bloody vomit after reposition of stomach.	¼ inch wound anterior surface of stomach; free blood in cavity.	Lembert sut.; cavity mopped out; no drain.	Recov.	Nourished wholly by enemata for 10 days.
27	H. C. Dalton, Ibid, p. 94.	F. 24	Soon.	Fell upon fence picket; wound 2½ inches in left auxiliary line bet. 8th and 9th ribs; omentum and 4 in. small intes. protruding; pike entered abdomen thro' thorax.	No visceral injury found; much free blood; wound of diaphragm.	Bowel and omentum cleansed and replaced; wound of diaphragm sutur'd with catgut; abdomen cleansed; no drain in abdomen.	Recov.	Drain into thoracic wound.
28	H. C. Dalton, Ibid, p. 97.	69	3 hours	Excrutiating belly pain; fair condition; prolapse of 2 inches omentum.	3 perforations small intestine; large amount free blood.	Lembert sutures; abdomen cleansed; glass drain.	Died in 31 hrs.	Vomiting, etc., at end 24 hours; no post-mortem record.
29	H. C. Dalton, Ibid, p. 97.	26	3 hours	Negative hydrog. test.	Considerable free blood; no visceral injury.	Irrigation; glass drain.	Recov.	Symptoms of peritonitis at once stopped by large dose salts on second day.
30	H. C. Dalton, Ibid, p. 97.	22	2 hours	Condition good	Small amount blood; no visceral injury.	Abdomen cleansed; no drain.	Recov.	. . . . .
31	H. C. Dalton, Ibid, p. 98.	24	Few hours	Great shock; intense pain; drunk, and had walked far after being injured.	Small am't blood; no visceral injury discovered.	Abdomen cleansed .	Died in 36 hrs.	No post-mort. record.
32	Molitor, Archiv. Med. Belges, Brux, 1887, 173.	. . . . .		Intestine protruding .	2 wounds intestine, 1 of mesentery.	Intestine sutured; mesentery ligated.	Recov.	. . . . .
33	Postemski, Bull. d' Acad. Med. di Roma, 1887-'88, ix, 272.	. . . . .		Signs of hæmorrhage.	Wound left lobe liver 2¼ in. in length, ½ inch deep; much free blood.	Liver wound closed by fine gut sutures; bleeding then stopped.	Recov.	. . . . .
34	N. B. Carson, St. Louis Cour. Med. 1887, No. 3, 226.	F. 40	36 hours	Condition good; abd. distended and somewhat tender; pulse intermittent.	Wound of liver and gall-bladder.	Suture of liver . . .	Died.	Post-mortem: peritoneum "almost normal."
35	Tuholski, St. Louis City Hos. Records, Jour. Am. Med. Ass'n, 1887, Nov. 5, 581.	21	. . .	Condition good	None found	Abdomen cleansed .	Recov.	. . . . .
36	D. V. Dean, Ibid. .	32	. . .	Condition good	Abdomen contained much decomposed blood and serum; no visceral wounds.	Cleansed	Died.	No post-mort. record
37	D. V. Dean, Ibid. .	30	. . .	Condition good	No visceral injury.	Peritoneum cleans'd	Recov.	. . . . .
38	Gal, Centralbl. für Chirurg. '86, 686.	45	9 hours	Gored by cow; condition good.	No visceral wound	. . . . .	Recov.	. . . . .
39	Dav. Prince, Trans. Am. Surg. Ass'n. 1887, 214.	Adult	. . .	. . . . .	¼ inch wound of stomach .	W'nd sutured; drain	Died in 3 hrs.	. . . . .
40	A. F. M. Vance, Am. Prac. and News, 1887, iv, 195.	22	2 hours	Profound shock; tense belly walls.	Wound transverse colon; large amount blood and fæces in cavity.	Wound sutured and abdomen irrigat'd; rubber drain.	Recov.	. . . . .
41	J. H. Packard, Med. and Surg. Rep'r, Jan. 5, 1889, 20.	12	2 hours	Marked collapse; some protrusion of intestines; had fallen upon moving circular saw.	1 entire division of intestine, several tears of omentum; 2 abrasions of intestine.	Lembert sutures to wounds; omentum ligated; irrigation and drain.	Recov.	. . . . .
42	M. H. Richardson, Boston M. and S. Jour., Sept. 8, '87.	F. 23	Soon.	No symptoms.	None found	Abdomen explored; no drain.	Recov.	. . . . .
43	Girdlestone, Australian Medical Jour., '87, ix, 313.	41	12 hours	No protrusion at first, but before reaching hospital 12 inches intestine were out; nausea, but condit'n fair; cut by glass.	Much blood; no visceral wound, but prolapsed gut, dry and very dirty.	Abdomen cleansed; drain.	Recov.	. . . . .
44	T. J. Bennett, Daniels' Texas Med. Jour, '87, 3, 213.	17	16 hours	Great pain; blood and food discharged thro' wo'd; condition fair.	Much food, fish bones and free blood; 1½ in. wound of stomach; wound of omentum.	Stomach sutured; abdomen cleansed; drainage.	Recov.	. . . . .
45	J. W. Heddens, Pittsburgh Med. Rev., Aug., 1887, 234.	26	. . .	. . . . .	Considerable free blood in cavity.	Abdomen cleansed; no drain.	Recov.	. . . . .
46	C. A. Jersey, Pittsburgh Med. Rev., Oct., 1887, 281.	27	36 hours	Peritonitis.	. . . . .	Drainage	Died.	Died of shock; no other details.
47	A. P. M. Vance, Pittsb. Med. Rev., 1888, 63.	23	3 hours	Two stab wounds of abdomen.	No visceral wounds.	Abdomen irrigated; no drain.	Recov.	. . . . .
48	C. B. Penrose, Pittsb. Med. Rev., 1888, 63.	40	5 hours	. . . . .	Wound of transverse colon.	Wound sutured; abdomen irrigated.	Died on 3d day.	Post-mort.: abdomen in good condition; cerebral embolism.
49	A. C. Bernays, Pittsburgh Med. Rev., 1888, 89.	35	10 hours	. . . . .	1 wound of mesentery, 1 of omentum; hæmorrhage.	Wounds sutured; abdomen cleansed; no drain.	Recov.	. . . . .
50	A. C. Bernays, Ibid.	38	. . .	Five separate stabs over liver area.	5 extensive wounds of liver.	Wounds sutured; no drain.	Died.	Suicide; no post-mortem record.

TABLE 2—STAB WOUNDS—*Continued.*

Case.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
51	E. A. Waggener, Pittsb. Med. Rev., 1888, 239.	26	38 hours	General peritonitis. .	. . . . .	Drainage	Died in 52 hrs.	Died of continued peritonitis, no post-m. record.
52	C. B. Penrose, Pittsburgh Med. Rev., 1888, 291.	30	Soon.	. . . . .	Bleeding merenteric vessels, serous coat intestines cut, free blood.	Vessels tied; Lembert sutures.	Died on 3d day.	Post-mortem: no peritonitis.
53	C. B. Penrose, Ibid.	38	Soon.	Six-inch transverse wound of abdomen; most intestines outside cavity.	No visceral injury.	Bowels cleansed and returned; abdom'n cleansed; glass drain.	Died in 8 hrs.	Died of shock. . . . .
54	Jno. Ashhurst, Jr., Penn. Hosp. Rep., 1888, Case 172.	28	Soon.	. . . . .	4 wounds small intestine, 1 of bladder.	Lembert su.; irrigation; glass drain.	Died in 33 hrs.	Post-mortem: peritonitis due to infiltrat'n of urine from overlooked w'nd of bladder near trigone.
55	Jno. Ashhurst, Jr., Ibid, Case 173.	38	Soon.	Stabbed with ice-pick; great shock.	1 intra-peritoneal wound of bladder.	Wound sutured by Lembert method; rubber drain.	Recov.	. . . . .
56	Wm. Hunt, Ibid, Case 552.	27	Soon.	Omental protrusion .	2 perforations small intest.	Lembert sutures; irrigation; no drain.	Died on 5th day	Died of delirium tremens; post-mortem: abdomen in excellent condition.
57	C. B. Penrose, Ibid, Case 911.	30	Soon.	Three stabs of abdo'n.	2 wounds liver; great hæmorrhage; 2 wounds peritoneal coats of intestines.	Intestinal wound sutured; liver wound packed with catgut.	Died.	Post-mortem: no peritonitis.
58	C. B. Penrose, Ibid, Case 1802.	38	Soon.	. . . . .	No visceral lesions	. . . . .	Recov.	. . . . .
59	T. G. Morton, Ibid, Case 1467.	26	Soon.	Two stabs of abdomen; great shock.	3 omental wounds; several tears of intestinal walls, kidney w'nded and bleeding; great hæmorrhage.	Wounds sutured; irrigation; glass drain.	Died in 19 hrs.	Died of shock. . . . .
60	John H. Packard, Ibid.	22	. . .	Omental protrusion. .	Wound of omentum.	Wounded part omentum ligated and cised; irrigation; no drain.	Recov.	. . . . .
61	Chas. Ball, Dublin Jour. Med. Sci., 1888, lxxxv, 357.	15	4 hours	Chisel wound of abd.; vomiting of blood; stained material; great shock; signs of hæmorrhage.	½ in. wound greater curvature of stomach; much free blood from wounded vein of meso-colon.	Lembert sutures; abdomen cleansed.	Recov.	. . . . .
62	A. H. Perfect, N.Y. Med. Jour., June 30, 1888, 704.	45	Soon.	Great hæm.; protrus'n portion of liver, also portions of omentum and hepatic flexure of colon.	Wound of liver 3½ in. long, ¾ inch deep.	Liver w'nd sutured and hæmorrhage ceased.	Recov.	Pleura opened also by axe and lung wounded 8th rib divided.
63	J. C. Sexton, Med. News, Dec. 15, 1888, 672.	29	9 hours	Shock, great pain, prolapsed knuckle of intestine; extravasat'n of fæces through abdominal wound.	2 large wounds small intestine; large am't extravasated blood and fæces.	Lembert sutures to wounds; abdomen cleansed, irrigated and drained.	Recov.	. . . . .
64	J. C. Sexton, Ibid, 674.	29	6 hours	Struck by fragment from cannon and cicatrix from former abd. section for tranmatism (88 days old) torn open; great shock; intest. and mesentery prolaps'd and strangulated.	No visceral wounds; no sign of wounds which had previously been sewn.	Abdomen irrigated.	Recov.	. . . . .
65	T. W. Huntington, Sacramento Med. Times, Oct., 1888, 452.	24	3 hours	Peritoneum appeared to be distended with blood; free hæmorr. from wound.	3 pints blood in cavity; no visceral wounds; blood apparently came from veins near kidney.	Abdomen cleansed.	Recov.	. . . . .
66	Finlay, Edinburgh Med. Jour., Ap., 1889, 925.	24	. . .	Prolapse of intestine; two abd'l wounds.	Wounds of small intestine.	Continuous suture to intestinal wounds.	Recov.	. . . . .
67	J. Grindon, St. Louis Cour. Med. 1887, ii.	F. 30	1 hour.	Condition good	Wounds of small intestine.	Excision of portion small intestine,	Recov.	. . . . .
68	Jno. Ashhurst, Jr.' unreported.	23	1 hour.	Condition good. . .	2 large wounds ascending colon; 1 punctured wound colon; much extravasated blood and fæces; colon distended with blood.	Wounds sutured; glass drain.	Died in 40 hrs.	Post-m.: another large w'nd of colon found; several pints disintegrated blood in colon and rectum.
69	T. G. Morton, unreported.	Adult	Soon.	Condition poor; signs of hæmorrhage.	3 wounds descending colon; great extravasation of blood and fæces.	Wounds sutured; bleeding points ligated; abdomen irrigated.	Died in 30 hrs.	Post-m.: great hæmorrhage from giving way of mesenteric vessel.
70	J. M. Pox,] unreported.	19	2 hours	Great shock.	Bleeding vessels of stomach and of pylorus; clots and blood in cavity.	Wounds sutured; bleeding controlled; no drain.	Died in 33 hrs.	Peritonitis next day; abdomen reopened, irrigated and drained; post-m.: wound of liver; peritonitis.
71	Benisovitch, Khirurgetchesky Vestink, No. 2, 1887, 887.	18	3 hours	Continuous nausea & hæmorrhage from wound; shock.	Extensive bleeding wound of serous & muscular coats of stomach; belly filled with clots and blood.	Irrigation, repair of wound, drain.	Recov.	. . . . .
72	O. H. Allis, unreported.	20	3 hours	Some shock; signs of intra-periton'l hæmorrhage; unsuccessful hydrogen test.	Large transfixing wound of root of mesentery; terrific hæmorrhage; transfixing wound small intest. each extrem. ½ inch long.	. . . . .	Died on table.	Died of frightful hæmorrhage.

TABLE 2.—STAB WOUNDS—*Continued.*

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
73	C. C. Jones, N. Y. Med. Jour., May 12, 1889.	19	. . .	Protrud'g bit of omentum; little shock.	¼ inch wound of stomach; much extravasated food and blood.	Wound sutured; abdomen cleansed.	Recov.	. . . . .
74	Baudens, Ann. of Surg., May, 1886, 392.	. . .	. . .	. . . . .	2 perforations of intestine.	Wounds sutured. . . .	Died.	Post-mortem: another wound, of cæcum, discovered.
75	Jobert, Günther, Operationslehre.	23	. . .	Prolapse of intestine.	Wound enlarged; 2 wounds of intestine.	Wounds sutured. . .	Died in 36 hrs.	Post-mortem: another perforation found.
76	Davida, Günther, Operationslehre, iv, 163.	Adult	Soon.	Gored by cow; protrusion of intestine.	2 wounds protruded intest.	Gut sutured.	Recov.	. . . . .
77	Koenig, Trans. 18th Cong. German Surg., Med. News, June 22, 1889, 693.	Adult	14 hours	. . . . .	. . . . .	. . . . .	Recov.	No details. . . . .
78	Geo. Lawson, Lancet, Mar. 3, '88.	. . .	2 hours	Wound in fifth intercostal space near nipple; extravasation of food through wound; much shock.	1½ in. w'nd cardiac extrem. anterior wall of stomach; wound of diaphragm.	Stomach wound sutured; irrigation of peritoneum and pleura; drain to peritoneum.	Died in 12 hrs.	Died of asphyxia and peritonitis; post-m.: wound and collapse of lung; 8 oz. fluid in pleura; 4 oz. in peritoneum.
79	J. A. Black, Daniels' Texas Med. Jour., Dec., 1887.	17	12 hours	Great pain; extravasation of food thro' wound.	Large wound stomach and omentum; fish bones and other food in cavity.	Wounds sutured. . .	Recov.	. . . . .

TABLE 3.—RUPTURED BLADDER.

No.	Operator and Reference.	Age.	Time after Injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of Intraperitoneal Injuries.	Result.	Remarks and post-mortem.
1	Walters, Pittsburg.	22	10 hours	Signs of active peritonitis.	Much blood and urine; extensive tear at base of bladder.	Removal of foreign contents; drainage tube.	Recovered.	Catheter in bladder also.
2	W. T. Bull, An. of Surg., 1885, i, 67.	46	13 hours	Great shock; bloody urine; dulness half way to umbilicus; catheter went beyond bladder.	3¼ inch rent of posterior wall of bladder.	7 Lembert sutures. .	Died in 7 hrs.	Also had fractured pelvis.
3	Jos. M. Fox, Med. News, Dec., '87.	38	19 hours	Great pain about bladder and desire to micturate; bloody urine; great shock.	Much blood and urine; 2½ inch triangular rent in anterior wall of bladder.	15 Lembert sutures; soft catheter in urethra.	Died in 42 hrs.	No abdominal drain; post-mortem: bladder wound firm.
4	J. Duncan, Lancet, 1886, ii, 399.	38	22 hours	Shock; desire to urinate, but no power; bloody urine, peritonitis, vomiting.	Blood and urine; 2½ inch rupture of posterior bladder wall.	Glass drain sutured into bladder w'nd.	Died in 55 hrs.	Suppression of urine.
5	Wm. McCormac, Lancet, 1886, ii, 1118.	37	27 hours	Fluid present in abd.; signs incipient peritonitis; nausea.	Large amount bloody fluid; 3 inch rent upper portion of bladder wall.	12 Lembert sutures.	Recovered.	Urine passed voluntarily from first
6	McGill, Lancet, 1886, xxi, 972.	. . .	3 days.	Insensible for time; pain; bloody urine; could not urinate, though had desire; incipient peritonitis.	Pint of urine; 4 in. rent of apex & fundus of bladder.	11 sutures.	Died in 17 hrs.	Post-mortem: bladder wound firm.
7	C. Heath, British Med. Jour., '86.	Adult	40 hours	Tense belly; bloody urine by catheter; injected water felt through abdomen by patient.	Rent of bladder.	Continuous suture.	Died in 6 days.	Post-mortem: suture had given way.
8	Hofmokl, British Med. Jour., 1883, i, 560.	Adult	. . .	Principally those of extra-peritoneal rupture.	Intra- and extra-peritoneal rupture of bladder; great infiltration of tissue with blood.	Partial suture; upper portion left open and drained.	Recovered.	. . . . .
9	MacCormac, Lancet, 1886, ii, 1118.	33	19 hours	95 oz. blood-tinged urine drawn; walked a mile to hospital day after injury.	4 inch median vertical rent of bladder.	16 Lembert sut.; peritoneum at sides divided to relax bladder walls.	Recovered.	. . . . .
10	A. Willett, St. Bartholomew Hosp. Rep., 1876, 209.	48	29 hours	Shock & pain; bloody urine by catheter; later, symptoms of peritonitis.	3½ inch rent across fundus of bladder.	Interrupted sutures.	Died in 23 hrs.	Post-mortem: portion of w'nd found open.
11	A. W. M. Robson, MacCormac's Monograph, p. 53, 1887.	68	3 hours	Frequent desire but could not micturate; bloody urine by catheter; frac. right side pelvis; patient conscious, pulse feeble.	None found.	Peritoneal portion of bladder not involved.	Died in a few hours.	Post-mortem: abdom'l walls above bladder infiltrat'd with blood and urine; bladder torn and penetrated by fragm'ts of bone.
12	Socin and Keyser, Annals Surgery, Feb., 1887.	20	. . .	Reten. of urine; bloody fluid by cath.; pain above pubes; hiccough.	Extra-peritoneal half-inch rent of bladder; no involvement of peritoneal cavity.	Bladder sutured to abd'l wall; drain tube into cavity of bladder from above	Recovered.	Tube kept in 9 days.
13	Bonnenburg, Centralbl. f. Chirurgie, 1885, 838.	. . .	2 days.	Clear urine by catheter; signs of peritonitis began in 24 hrs.	Rent from vertex to neck along posterior wall.	No sutures; drain tube into bladder from above.	Died on 4th day	Intense peritonitis after operation.

TABLE 3—RUPTURED BLADDER—*Continued.*

Case.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
14	C. J. Symonds, Trans. Clin. Soc. London, '88, xxi, 228.	F. 7	7 hours	Great collapse; great pain in epi- but none in hypogastric reg'n; blood-streaked vomit; pain over bladder began 7 hours after injury; percussion dulness to umbilicus; almost pure blood by catheter.	Y-shaped rent in vertex of bladder, partly intra- and partly extra-peritoneal; pelvic peritoneal cav. full of blood and urine.	Rent united by 12 Lembert sutures; 2 pints blood and urine sponged out; no drain.	Died in 7 days.	Post-mortem: suppurative peritonitis; wound had leaked; 2 days after operat'n wound had been opened and belly irrigated; urinary discharge thro' same from then till death.
15	T. P. Teale, MacCormac's Mono., 1887, p. 54.	25	2 hours	Kicked in abdomen; pain in hypogastrium; inability to micturate; no shock; subsequently tympanitis and percussion dulness over flanks.	Intestines floating in large quantity straw-colored fluid; vertical 1 inch rent of fundus.	Abdomen cleared of urine; Lembert sutures to rent, drainage by tube thro' perineum.	Died in 19 hrs.	Secondary hæmorrh. from perineal w'nd; no peritonitis.
16	W. J. Walsham, Lancet, '88, i, 173.	21	13 hours	Little or no shock. . .	Rent of bladder 1½ inches.	Rent closed by nine Lembert sutures; no drain.	Recovered.	. . . . .
17	Halstrom, Lancet, June 28, 1888.	21	13 hours	No shock	Rent 1½ inches long	9 Lembert sut.; catheter first day; no drain; boracic irrigation.	Recovered.	. . . . .
18	T. Holmes, Lancet, July 23, 1887.	24	6 hours	Abdom'l pain; blood-tinged urine by cath.; point of catheter felt in abdominal cavity.	2-inch rent	8 Lembert sutures; no drainage.	Recovered.	. . . . .
19	E. L. Keyes, N. Y. Med. Rec., Dec. 24, 1887.	22	22½ hours	Some bloody urine by catheter; incipient peritonitis.	Rent 1¼ inches backward. .	9 Lembert sutures; permanent catheter; glass abdominal drain.	Died in 18 hrs.	Post-mort.: death from shock and alcoholism.
20	H. H. Grant, Jour. Am. Med. Ass'n, July 28, 1888, 118.	19	5 hours	Shock; bloody urine by catheter; bladder collapsed.	2½ inch rent; fracture horizontal ramus near pubis.	11 Lembert sutures; rubber drain; irrigation.	Recovered.	Catheter used every 2 hours subsequently
21	H. O. Hitchcock, Pittsburg Med. Rev., Mar., '88, 55	34	18 hours	Shock; free fluid in abdomen; could not micturate; 11 pints bloody urine by catheter; no peritonitis.	Rent 2 inches, ...	Sutures; apposition not entirely accomplished; irrigation; no drain.	Died on 3d day.	Permanent catheter.
22	H. F. Stanton, Indian Med. Gaz., Jan., 1889, 22.	Adult	50 hours	Patient unable to lie down; had been kicked in abdomen.	Extensive tear of posterior wall.	Lembert sutures . .	Died in 24 hrs.	No other details. . . .
23	A. Blum, Archiv. gén. de Med., July, 1888, p. 5.	Adult	24 hours	Horse kick of abdom.; could not micturate; much clear urine withdrawn by cath.; no signs of ruptured bladder; operation undertaken for peritonitis.	1-inch tear of fundus; much straw-colored, clear serum in peritoneal cavity; bladder wound edges not infiltrated with blood.	10 Lembert sutures; no bladder wound; abdomen cleansed; permanent drain.	Recovered.	Cystitis on 13th day. .
24	W. H. Brown, Lancet, Aug. 4, 1888, 208.	20	11 hours	Horse fell upon him; peritonitic decubitus, distended abdomen; pure blood by cath.; great pain; inability to pass urine.	Rent posterior wall far forward; bloody fluid in peritoneum.	Abdomen irrigated; abd'l drain; catheter in bladder; wound inaccessable to suture.	Died in 11 hrs.	No post-mortem . . .
25	H. O. Hitchcock, Pittsb. Med. Rev., 1888, 55.	34	36 hours	Passed bloody urine; fluid in, and distension of, belly; some shock; 11 pts. bloody urine by catheter.	Bifid rent, 6 inches long, of posterior portion of fundus.	Lembert sutures to tear; abd. cleansed; catheter tied in.	Died in 20 hrs.	Never recovered from shock.
26	C. K. Briddon, N. Y. Med. Journal, March 9, 89.	Adult	3d day.	Intense pain in abd'n and head of penis; retraction of testes; no blood in urine except at one time signs of peritonitis.	Rent in posterior wall of bladder; several pints of bloody fluid in cavity.	Rent sutured	Died in 14 hrs.	No post-mort. record.
27	R. Morrison, Brit. Med. Jour., Jan. 26, 1889.	25	. . .	Great collapse; distended cystitic bladder had given way to slight traumatism; signs of peritonitis.	¾-inch rupture of pouch between ribs of bladder in upper posterior portion.	Rent sutured	Died in 4 days.	Died of peritonitis . .

TABLE 4.—RUPTURED OR CONTUSED ABDOMINAL VISCERA.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal Lesions, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
1	Bouilly, Bull. et Mem. Soc. de Chir., 1883, 690.	29	23 hours	Signs of incipient peritonitis; faecal vomit'g.	3-inch rupture of small intestine; also gangrenous bruise of intestine above rupture.	Resection 5 inches small intestine.	Died in 10 days.	Post-mort.: gangrenous portion had given way after manipulation.
2	Chevasse, Ib., 1885, 123.	23	. . .	Shock at first, then peritonitis.	Colon badly contused in two places; intest. and meso-colon infiltrated with blood.	None	Died in 6 days.	. . . . .
3	E. A. Waggoner, St. Louis Cour. of Med., 1886, xvi, 204.	8	27 hours	Walked 400 yards; great shock, followed by violent peritonitis.	Rupture of intestine 2½ feet above ileo-cæcal valve; much fæces.	Sutured	Died in 2 hrs.	. . . . .
4	T. M. Girdlestone, Australian Med. Journal, 1883.	22	4th day,	Shock, which was followed by development of peritonitis; vomit'g.	Almost complete rupture of ileum; tears of omentum.	Excision of wounded bowel.	Died in 1½ hr.	. . . . .
5	Fitzgerald, Ibid, 1883, 264.	58	20 hours	All signs of double strangulated hernia. (His truss had been pressed violently against descended hernia.)	Ruptured small intestine.	Sutured	Died in ¾ hrs.	. . . . .
6	Dixon, Annals of Surg., v, '87, 321.	32	7 days.	Fell down elevator; profound shock, vomit'g, intense pain in back, loins, and over right hypochondrium; fracture 10th dorsal vertebra; later, rise temperature, moderate tympanitis, and slight enlargement and dulness over cæcal region; aspirator needle brought fluid like bile.	Gall-bladder ruptured and collapsed; infiltration of much bile along posterior border of ascending colon.	Cystic duct ligated and gall-bladder dissected out by knife and cautery; adjacent tissues sutured over stump.	Died in 17 days.	Increasing icterus and diarrhœa after operation; some adhesions in peritone'm; obstruction of common duct by impacted gall-stone.
7	M. Chauvel, Le Progrès Médical, Mar. 7, '85, 193.	. . .	3 days.	Kicked in abdomen by horse; three days afterwards signs of general peritonitis.	Transverse meso-colon and right half pancreas contused.	Not mentioned . . .	Died 7 days af. injury.	Abd. simply opened; lesions only found post-mortem.
8	J. Croft, Lancet, 1887, I, 915.	34	24 hours	Abdom'n stamped upon; shock; peritonitis.	Rupture lower portion of ileum extending thro' ⅓ths of its circumference; extravasation of fæces.	Abdomen cleansed; wound of ilium sutured to abdominal wound; time, 1½ hours.	Recov.	Died 29 days later of shock after operat'n for artificial anus closure lasting 2½ hours.
9	J. Croft, MacCormac's Monogr., 1887, p. 55.	25	13 hours	Run over by cab; pain and much shock; signs of internal hæmorr.; fluid in flanks.	Ruptured spleen; fractured 8th and 9th ribs; 2 pints of free blood in cavity.	Spleen excised; abdomen cleansed.	Died in a few hours.	Never recovered from shock. Post-mort.: clot in renal vessels.
10	Demons, Cong. F. de Chirurg., 1885.	Adult	. . .	Crushed bet. cart wheel and wall.	Circular rupture of intestine.	Lembert sutures to bowel wound; cavity "purified."	Died.	Post-mort.: a second overlooked rupture of bowel found.
11	Gregory, MacCormac's Monogr., 1887, p. 56.	. . .	. . .	. . . . .	Rupture of ileum.	Suture of bowel wound.	Died.	Operation not undertaken until hope had been practically abandoned.
12	A. O. Mackellar, MacCormac's Monogr., '87, 56.	57	29 hours	Struck by shaft of cart; collapse, pain, signs of internal hæmorrhage; dulness in flanks.	Rupture of spleen; fracture of rib; much altered blood.	Irrigation drainage.	Died on 3d day.	Operation not undertaken until marked peritonitis present. Post-mort.: rupture of kidney also.
13	Edmund Owen, Lancet, ii, 1885.	Adult	41 hours	Fell across board placed edgewise; shock; peritonitis.	One-inch rent of ileum. .	Intestine clamped and artificial anus formed.	Died 8 hrs. af. oper'n.	No post-mortem. . . .
14	Alf. Willett, MacCormac's Mono., 1887, 56.	32	Soon.	Fell four feet upon back; immediate epigastric pain and collapse; bowels acted freely, vomiting incessant; emphysema & crackling around umbilicus.	Cavity full of blood; rupture of right lobe of liver extending from hilus.	Several pints blood withdrawn.	Died 4 days af. oper'n.	Post-mortem: large branch of portal vein torn.
15	Atkinson, British Med. Jour., 1888, i, 357.	28	9 hours	Fell against edge of table; some collapse; abdomen retracted; vomiting.	½-inch rupture of ilium near duodenum; bloody fluid; marked peritonitis.	Wo'd closed by Lembert sutures; boracic irrigation, glass drain.	Died.	Belly reopened following day and abdom'n irrigated again.
16	McBurney, N. Y. Med. Jour., Jan. 26, 1889, 106.	12	8 hours	Fell across railroad rail; profound shock; pain in back. Later, abd. flat, dulness in flanks; shock improving.	Quart of free blood; extravasations about colon and omentum; branch of pancreato-duodenal artery ruptured and bleeding.	Vessel ligated, abdomen cleansed.	Recov.	. . . . .
17	W. Mayo Robson, Proc. Clin. Soc. London, '88, 122.	24	48 hours	Continuous vomit'g and other signs of peritonitis; condition bad.	½-inch rent of small intestine thro' serous and muscular coats only; also a complete rupture of small bowel with great extravasation of fæces.	Lembert sutures to partial rupture, artificial anus made of other wound; drain, irrigation.	Died 2 hrs. af. oper'n.	Post-mortem: rupture was 2 feet below pylorus; diffuse purulent peritonitis.
18	C. K. Briddon, N. Y. Med. Journal, June, 1889.	39	30 hours	Hit in abdomen by pole of wagon; great pain, shock, and signs of hæmorrhage at first; great distension of abdomen at time of operation.	Small rupture of ileum leading into mesentery; much free blood; hæmorrhage still going on; great extravasation of fæces.	Suture of wounds, ligation of arteries, incisions and subsequent suture of intestines to allow escape of gas; irrigation, drain.	Died in 20 hrs.	Post-mort.: pint blood from overlooked bleeding intestinal artery; peritonitis.

THE CLINIC.

CLINICAL LECTURE UPON DISEASES OF WOMEN, JEFFERSON MEDICAL COLLEGE HOSPITAL, OCTOBER 29, 1889.

BY THEOPHILUS PARVIN, M.D.,

PROFESSOR OF OBSTETRICS AND OF THE DISEASES OF WOMEN AND CHILDREN IN THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA, PA.

[Reported by Dr. Edward E. Graham for THE JOURNAL.]

Gentlemen:—The first patient presented you to-day is one upon whom I did a laparotomy three weeks ago for ectopic gestation. It was a case of tubal pregnancy; that is to say, the gestation cyst occupied one of the tubes. This patient was nursing at the time certain symptoms pointed to a new pregnancy, and as she herself said, she would have believed herself pregnant if she had not had for several days a discharge of blood from her womb, which she believed was the monthly flow. But the flow lasted longer and was more profuse than usual, and finally at two different times pieces of membrane, probably the decidual membrane, were discharged. She had a painful and growing tumor near to the uterus upon the left side. She had been an out-patient of the Pennsylvania Hospital, where my friend Dr. Baldy saw her two or three times, and finally made the diagnosis of ectopic gestation as most probable. She was taken one day with very severe pain at home, and sending for her family physician, Dr. Orville Horowitz, he advised her immediate removal to this hospital. The operation was done the next morning after her arrival. A drainage tube was introduced after the removal of the enlarged oviduct and the ovary, and after thorough washing out the peritoneal cavity, the tube was removed at the end of forty-eight hours, and as you now see upon exposure of the abdomen, the incision, only about 3 inches long, has entirely healed. A woman after an abdominal section should remain in bed for at least three weeks, lest perfect and firm union of the incision fail, and a hernia result. More than once I have allowed patients to get up after a much shorter confinement to bed, and a hernia has been the consequence.

Case 2. Increase of Fat in the Abdominal Wall Simulating a Tumor.—The next patient is 45 years old, is married, and has given birth to two children. She has observed during three years a constant increase in the size of the abdomen, and fears that she has "a tumor;" she comes here to have this question settled. Upon palpation no tumor can be felt, but placing a hand upon each side of the abdomen, the ulnar border being below, and my back turned towards the woman's face, I endeavor to approximate my hands; you see that they include a great mass of tissue quite outside the abdominal cavity, and that this cavity is not at all enlarged. The apparent tumor is not in the usual sense of the term a tumor, not a neoplasm, but simply due to a great accumulation of fat in the abdominal wall. This condition is sometimes spoken of as a pendulous abdomen, but it is only the anterior abdominal wall which is pendulous. When she is sitting this hanging wall rests upon her thighs, and in walking too it is an inconvenience. Probably she would be made more comfortable by wearing a suitable bandage, not necessarily one made by those dealing in bandages, but such a one as any ingenious woman can fashion for herself out of strong unbleached muslin or cotton drilling. Such bandage will be less expensive, and probably as useful as one bought at the shops.

Case 3. Cystitis in Pregnancy.—This patient is 18 years old, is married, and ten months ago was delivered of a living child. In the third month of her pregnancy she began to suffer with frequent and painful micturition; she had to empty the bladder ten or twelve times daily, and several times each night. The disorder then beginning has continued until now. A specimen of the urine is shown you; it is cloudy, alkaline, and its specific gravity is 1016. Examination with the microscope shows a large quantity of epithelium and of pus.

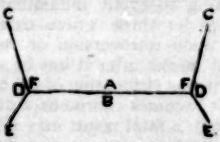
Cystitis in pregnancy, while not frequent, certainly is not rare; just as there has been described a pregnancy nephritis, so there is a pregnancy cystitis, only the latter is much oftener seen than the former. In an interesting monograph upon cystitis in woman by Monod, published a few years since, he found twenty-six out of 124 pregnant women who suffered with vesical disorder early in pregnancy, and of the twenty-six, sixteen were primigravidæ. He attributes the cystitis of pregnancy chiefly to hyperæmia of the bladder caused by the close vascular connections between this organ and the uterus, the latter necessarily having its blood supply vastly increased. But in addition to this he considers sexual intercourse, frequently in the newly married excessive, as contributing to cystic inflammation. We do not now consider those grave cases of cystitis consequent upon retroversion or retroflexion of the pregnant uterus after it has become incarcerated, spontaneous evacuation of the bladder being impossible it becomes enormously distended, and sloughing with a fatal result may follow.

In regard to the treatment of cystitis in the female, I believe that you may very well dispense with medicines administered by the mouth for the purpose of action upon the vesical mucous membrane by being eliminated through the kidneys; but you will find the most important and prompt means of cure in washing out the bladder by means of suitable solutions or mixtures. This irrigation should be done with Hegar's funnel, to which a rubber tube and catheter are attached,

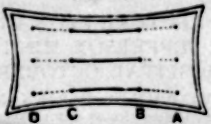
and which is now shown you. The funnel, tube and catheter are filled with the preparation selected, and the funnel held so low that the fluid will not escape through the catheter previous to the introduction of the latter. Introduce the catheter, then raise the funnel, and the fluid passes into the bladder gently, without the least violence. After having had a sufficient quantity enter, lower the funnel, and the bladder is at once emptied. What shall be used for the injection? Braxton Hicks advocates slightly acidulated warm water, 1 or 2 drops of hydrochloric acid to the fluid oz. of water, for example. Recently I have been using a mixture of creolin and water, and the results have been very good. I first tried a 2 per cent. solution, but a mixture this strong will in many patients cause great suffering; it seems to me, therefore, better to begin with a mixture only half as strong, or even one still weaker. Remember when you irrigate the bladder to use the solution or mixture warm.

Case 4. Operation for Partial Rupture of the Perineum.—The next patient has a partial rupture of the perineum, and as you observe the tear which extends half-way back to the anus, you will see that there is also a condition which you frequently meet with if the injury is chronic, a prolapse of the recto-vaginal wall, that is a rectocele or proctocele. The operation which will be done is known as Tait's, after the distinguished Birmingham surgeon, Lawson Tait. I think the operation will be better understood and appreciated by giving Mr. Tait's words and using two of his diagrams in its description:

[1] "Having the folds of the buttocks pulled firmly apart, so that the cicatrix is put on the stretch, I enter the scissors at its extreme end on one side, and keeping strictly to its line, I run through to its other extremity. The incision is about ⅜ of an inch deep, and it forms two flaps, a rectal and a vaginal. From each end of the incision it is carried forward into the tissue of each labium for about 1 inch, and again backward for about ½ of an inch, making a wound like this—



The vaginal flap A is held upward, the patient being on her back, and the rectal flap B being turned downward, the angles A F C being pulled by forceps diagonally upward and inward toward the middle line, and the angles B D E being pulled downward and inward. The lines C E thus become straight, and the wound takes this form—



"By means of a stout-handled and well-curved needle the silkworm gut sutures are entered on one side about ⅛ of an inch within the margin of the wound, so as not to include the skin, at the dots A. They are buried deeply in the tissue as far as B, and then the needle is made to emerge so as to miss the angle of the wound. The needle again enters at the large dots C, and emerges at the dots B. By thus missing the upper or deep angle of the wound between B and C, the two great and divided masses of the old perineum, which lie in the parallelograms respectively bounded by the lines of large dots A—B and C—D, are respectively adapted. The rectal and vaginal flaps respectively point into the rectum and vagina, and like an old-fashioned flap valve prevent noxious material entering the wound. The resulting mass of perineum is amazingly large; union is almost inevitable, for I have failed only twice in many hundreds of cases, and then because there had been previous denuding operations. The resulting cicatrix is absolutely linear, and so resembles the natural *raphé*, that in three or four months after the operation it is quite impossible to determine, from the appearance of the parts, that the perineum has ever been injured, for there are no stitch-holes left to tell the story. The pain after the operation is trifling compared to the old method of quilled or shotted sutures. I leave the stitches in for three or four weeks, and take great care that the rectum and vagina are washed out twice daily."

I believe this method of operating is much to be preferred in most cases of perineoplasty. Its rapidity of performance, its simplicity, its firm foundation in just reason, and the satisfactory results in Mr. Tait's hands commend it, and I believe the day is not distant when the story of shotted wires and the quill sutures will be only of interest in antiquarian societies.

Case 5. Uterine Fibroids.—This patient is 45 years of age, married, and has given birth to two children; her labors were tedious and difficult, and each was ended by the forceps, and followed by pelvic inflammation requiring confinement to bed for several weeks. Six years ago the menopause occurred, and for two years she had excellent health, but for the last four years she has been subject to attacks of hæmorrhage from the womb, and while the loss of blood has been at no time excessive, yet its frequent recurrence has caused much weakness. Do not fail to observe

[1] This description, given by Mr. Tait, is found in the third edition of H. Macnaughton Jones' Practical Manual of Diseases of Women, London, 1888. The author of the Manual, by the way, strongly endorses the method.

the important fact that fibroids of the uterus, for the patient has several of these tumors, do not always shrink, atrophy, and cease to give trouble when the menopause is established. So usually is such the favorable result that one of the accepted methods of treatment of a patient suffering from hœmorrhage consequent upon such growths, is to anticipate nature's menopause by making an artificial one, removing the uterine appendages so that menstruation will cease. But what possible good would follow removal of the tubes and ovaries in this case?

These tumors begin in the uterine wall, oftener in the posterior than in the anterior, usually in the body, very rarely in the cervix, and according to the predominance of muscular tissue in their structure are known as myomata, of fibrous tissue as myo-fibromata or fibroids. These tumors are rarely solitary, but usually three or four or a larger number will be found. In the case of this patient I can by bimanual examination recognize four which have grown toward the peritoneal cavity, while probably there is only one which has become submucous, and is the source of the bleeding from which she suffers. Various remedies have been given this woman internally with little or no benefit. What those remedies are I do not know, but it would be well to try the fluid extract of hydrastis Canadensis, twenty drops four or five times a day, and she is so wretchedly anæmic I would like her to have twenty drops of the muriated tincture of iron twice or thrice daily. But something must be done immediately to arrest the hæmorrhage. Let me try the following treatment, a treatment which you will sometimes find quite useful: First dilate the cervix, then curette that portion of the mucous membrane at which the tumor is projecting, this curetting being followed by the application of Churchill's tincture of iodine, or of a solution of one of the iron salts mixed with glycerine.

Case 6. Primary Cancer of the Vagina.—The patient, who is forty-six years old, gives the following history: She was married when twenty-five years old, and has given birth to eight children, has had good health until about eight months ago when a profuse leucorrhœa was observed, followed in two months by occasional hæmorrhages from the vagina, and more or less local distresses; she has severe pain in the groins, extending to the sacrum, and almost constant "back ache"; she has been losing flesh, and her strength has been failing. Upon examination there is found occupying at least two-thirds of ths posterior wall of the vagina a vascular growth easily broken down, and presenting irregular prominences and fissures. The cervix and the vulva are quite free from disease, and therefore the affection has not extended from either to the vagina, a very common, almost constant occurrence alike in cancer of the external genitals or of the vaginal portion. Hence the disease is primarily vaginal, involving only the vagino-rectal wall. A piece of the growth was removed for examination with the microscope, and Dr. Coplin reports that it is undoubtedly cancerous. Primary cancer of the vagina is a very rare affection. Breisky, in a paper upon the subject written a few years ago, refers to only twenty-four cases of such disease having been reported up to that time. But there is a large number of unreported cases, so that the disease is less rare than Breisky's statement would indicate; Dr. Hearn, for example, who is present, tells me that he met with a case a few years since. The posterior wall of the vagina is more frequently affected than the anterior. The majority of the patients were between thirty and forty years of age, though the disease has occured at sixteen and at sixty.

From the nature of the tissues involved vaginal cancer has a rapid course. Only when the disease is discovered almost in its very commencement is there any hope from treatment; then complete extirpation being done, a temporary cure is accomplished. But in this patient it is utterly impossible to remove the entire diseased mass. Therefore only palliative treatment will be attempted—the patient's comfort will be increased somewhat, and possibly death will be delayed. Let as much of the disease be removed as possible, and this removal will be made by the galvano-cautery knife, with Simon's spoon, and by a preparation of bromine. The first is an excellent means theoretically, but often failing in practice; the operation is comparatively bloodless, but before you have completed it the electric current ceases. (This happened in the case, and Simon's spoon was substituted.) The blood soon obscures the field of operation when the spoon is being used, and to arrest the flow it is well to apply to the wound a mixture composed of one part of bromine, two of iodine, three of carbolic acid and four of alcohol; applying this mixture by means of cotton, the bleeding is arrested, and the use of the spoon is resumed. After removing as much of the diseased growth as possible, a pledget of cotton dipped in the solution mentioned is left upon the surface, and this surrounded and covered by pieces of cotton dipped in a bicarbonate of soda solution so that the caustic may not extend its action to adjacent healthy tissue. The tampon thus occupying the vagina will be removed at the end of two or three days, and then an antiseptic injection be used twice a day. (There was an improvement for a few weeks, but it was only temporary; the patient left the hospital in search of her truant husband, and very soon returned to say that she was suffering as much as, if not more than before the operation, and her general health showed still greater deterioration.)

MEDICAL PROGRESS.

PREVENTION OF TUBERCULOSIS.—At a recent meeting of the German Public Sanitation Association PROF. HELLER introduced the subject of the prevention of tuberculosis. He believes that tuberculosis is to be regarded as the most important of all diseases in that it furnishes the largest mortality of all causes of death. It is also the most important from the standpoint of social science, because its victims die after a long illness, during which their earning capacity is lessened or destroyed, while during life they are a constant menace to their fellows. From microscopical preparations Heller estimates the number of tubercle bacilli in the sputum of a tubercular subject at 1,000,000 per cubic centimetre; in a single expectoration, on an average, 3,000,000 bacilli are discharged. The control of tuberculosis should be urged most vigorously by State and community; such warfare promises a very important diminution, if not complete extermination of the disease. Koch's bacillus is the cause of the disease; its appearance outside of the animal organism has not been proved, although it is able to preserve its infective properties for a long time. The bacillus of tuberculosis may be acquired (*a*) by transmission, though this is of minor significance; tuberculosis has never been observed in the new born; the earliest age at which it has been observed is nine weeks after birth, the interval which is necessary for the outbreak of the disease after infection has taken place; (*b*) by direct or indirect conveyance from other tubercular human beings; the chief source of infection is the sputum; (*c*) by direct or indirect conveyance from tubercular animals, especially by their milk and by such parts as serve for food.

As measures to be taken against the spread of tuberculosis mention may be made of the disinfection of the sputum in schools, regular cleaning with water and frequent disinfection of the school rooms; the erection of disinfecting stations throughout the community, with the instruction of people regarding the technique of disinfection; repeated disinfection of dwellings and the utensils of tubercular invalids; the enforced disinfection of dwellings and effects of those who have died from tuberculosis; attention to the health of wet-nurses, midwives and attendants upon the sick; the supervision of those who are engaged in the preparation and sale of food stuffs, with the exclusion from such employments of coughers; the careful hygiene of hospitals, prisons, orphan asylums, and all similar institutions; the instruction of the populace; the strict enforcement of meat inspection; attention to breeding of tubercular animals; the inspection by veterinaries of the stabling where tubercular animals are found; the destruction of all animals found to be tubercular, with at least partial compensation to owners; the inspection of milk depots.

After the discussion a resolution was adopted by the Association, which recommended the earnest attention of the State and municipal authorities to the above rules of prevention.—*Wiener Med. Woch.*

TREATMENT OF LOCOMOTOR ATAXIA.—BENEDIKT reports a case of locomotor ataxia which, when admitted to his services, presented a marked degree of amblyopia and amaurosis, together with such a degree of ataxia that the patient could not stand, even with the assistance of two persons. After various attempts with hydropathic and electrical treatment, Benedikt stretched both sciatic nerves and the patient was soon able to walk alone, with the assistance of a cane. This case confirms a law formulated by Benedikt twenty-five years ago, to the effect that cases of tabes with prodromic atrophy of the optic nerve have a favorable prognosis as regards the ataxia. Bendikt also reports a case of locomotor ataxia treated by suspension. The patient has submitted to forty suspensions of two minutes each. Pain has almost disappeared, and the ataxia is greatly improved, the patient being able to stand erect even with his eyes closed. In this case, as in all cases of syphilitic origin, the ataxia is atypical. Benedikt maintains that the majority of patients afflicted with locomotor ataxia and progressive general paralysis have never been the subjects of syphilis.—Vienna correspondence *La Sem. Méd.*

TREATMENT OF SPASTIC INFANTILE HEMIPLEGIA.—BENEDIKT reports two cases of spastic infantile hemiplegia. Cases of hemiplegia which affect the type of apoplexy or cerebritis give a favorable prognosis when not complicated with symptoms of motor excitement. In cases where such symptoms do exist treatment of one extremity is capable of producing a favorable effect upon the functional activity of the entire organism. In spastic infantile hemiplegia which gives a grave prognosis, the patients are not able to use the affected extremity; furthermore, choreic movements of this extremity prevent functional activity of the other. In the two cases above referred to by Benedikt nerve stretching was adopted, in the first the radial and cubital were stretched, in the second the cubital and median. The results of this operation were complete cessation of the choreic movements. In the first case the improvement has lasted five and one-half years.—Vienna correspondence *La Semaine Méd.*

QUINSY.—In the early stages of quinsy, chloral hydrate is nearly a specific, three or four grains to the ounce of glycerine being used as a gargle. It is locally antiseptic, astringent and sedative.—*Medical Record.*

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SATURDAY, JANUARY 4, 1890.

THE SUSPENSION TREATMENT.

A little over a year ago CHARCOT made his first trial of suspension in the treatment of locomotor ataxia, the idea being given him by DR. RAYMOND, of the Paris Faculty, who brought it back from a trip into Russia. In January, 1889, he published his observations (*Prog. Méd.*), and today all over the world this proceeding is being employed on thousands of cases of the most widely varying nature, and often in the most hap-hazard and even reckless manner. MOTCHOUKOWSKY, Physician to the Odessa Hospital, who accidentally hit upon this plan of treatment through observing amelioration of subjective symptoms in a tabetic suspended with the Sayre apparatus for the application of orthopædic appliances, published in 1883 (*Vratsch*) seventeen cases so treated with favorable results in twelve, and made moderate claims for the value of the method. It became generally known, however, only a few months ago when the endorsement of Charcot gave it at once wide celebrity and secured it an extensive trial. This is one of the incidents which well demonstrate the present international character of medical science and at the same time the deserved potency of a master mind.

The results as reported are often conflicting and of necessity, in this short period of probation, usually premature and unreliable. The category embraces advantages gained and accidents incurred, patients restored and patients made worse, while cures and even fatalities are not lacking. On the whole commendation of the method prevails.

An empirical proceeding at the start, its *modus operandi* is as yet unknown, its position in the scale of usefulness undetermined. Some points have been made plain, however, not the least important of which is a degree of danger associated with its employment. Among important results directly attributable to its use are brachial palsies, temporary spastic contractures, fracture of the maxilla, alarming syncope, cerebral hæmorrhage and sudden death. Those employing suspension for orthopædic purposes often encounter patients who cannot tolerate the traction and position. These things point with no uncertain index to the necessity for precaution and care in selecting cases and applying this treatment. BLOCQ, a pupil of Charcot, points out a number of contra-indications to its use (*Bull. Médical*, January, 1889). Danger, according to this observer, is present in extreme weakness from any cause, and particularly when a considerable degree of anæmia is associated. Patients presenting œdema or obesity, those suffering with impaired respiratory or circulatory organs, as in emphysema, atheroma, enlarged heart, valvular mischief, previous apoplexy, etc., are not fit subjects for this treatment and liable to serious consequences from its employment. To these may be added those presenting kidney disease or active spondylitis. As yet it is not determined what conditions of the nervous system *per se* exclude this manœuvre.

It was determined by Motchoukowsky and confirmed by others that suspension of the dead body causes a lengthening of the vertebral axis, including the head, of from 3 to 5 centimetres. As the spinal cord floats somewhat freely in its canal it is doubtful that any appreciable tension is brought to bear upon it, and probable that such as may be exercised is expended upon the spinal nerves in the intervertebral foramina. Indeed, stretching of sciatic nerves for the benefit of ataxia, both by the passive flexion of the thigh on the body and by cutting operations, dates back to 1872 (Nussbaum), and improvement sometimes follows the proceeding. It may therefore be supposed that the nerve stretching brought about by suspension is an important factor, even should it not act directly upon the diseased elements of the cord.

Some suggestive experiments have just been

reported before the Italian Medical Congress by DR. LOMBROSO (*Sem. Médicale*, October). He suspended a number of rabbits in two series. In one a weight was attached to the body of the rabbit sufficient to make up the proportion of body to head weight as found in man, and these all succumbed after an average of ten suspensions. In each instance small meningeal hæmorrhages were found, particularly in the coverings of the cord, and the gray matter presented minute extravasations and engorgements most marked about the central canal of the spinal cervical segments. The rabbits suspended without the extra weight were not seriously affected and when examined presented no similar lesions. It is difficult to apply to man deductions made from such experiments on small animals, especially when natural conditions of body weight are changed, but we may here possibly see a reason why obese and œdematous patients stand the operation so badly. There can be no doubt that suspension increases arterial tension, as is shown by the engorged face, the rapid hard pulse, the quickened respiration, the frequent tendency to vertigo and the sphygmographic trace. It is probable that the temporary artificial hyperæmia of the nervous centres is an important element in producing the sometimes almost instantaneous improvement of subjective symptoms. It has been urged that suggestion and mental impression might account for this, but the improvement is not confined to the subjective features alone. The eye signs, the incoördination, the ability to stand and walk in a straight line with closed eyes, the cutaneous sensibility, the sexual power, the body weight, and even the patellar reflex, are modified for the better in certain cases.

In carrying out this procedure a number of practical points and safeguards are suggested by various reporters. The patient's sensations and condition should be the criterion for its continuance. Some tolerate three or four minutes of suspension from the beginning, while others can endure but a few seconds. The best results seem to be obtained by suspensions of not longer than five minutes repeated not oftener than on alternate days. At first, if not always, it is better that a sitting position be allowed the patient. In this way the treatment is less terrifying, gives better control of the subject, can be instantly discontinued, and possibly the flexion of the thighs serves to fix the lower end of the cord, while the diminished weight is an item on the side of safety. By using a spring scale the exact amount of traction can be observed and accurately modified and recorded. With this addition to the apparatus the treatment can be intelligently and tentatively undertaken, and the amount of force employed gradually and equably increased, but more than that equal to a moderate body weight for each patient is scarcely desirable or advisable. When suspension is partly made by the axillary bands, owing to the indirect attachment of the upper extremities through the shoulder girdle to the vertebral axis, the weight so supported is practically deducted from the force applied to the extension of the spinal column. In the sitting position they may better be omitted, simplifying and making more exact the application of the extending force and removing a source of danger to the axillary contents. The bands should be so arranged that any twisting or over-extension of the head is not produced. If the teeth do not properly articulate or are in part wanting an interdental splint may be fashioned, or sometimes a roll of cotton wool will answer the purpose. The predisposition to fracture in tabes makes this precaution an important one.

The inefficacy of all former treatment of organic disease of the cord, the promises held out by suspension and the indorsement it has received in high places, make it the more desirable that it should have a thorough trial, be deprived as far as possible of danger, and employed with unusual circumspection and precaution.

FUNDAMENTAL MEDICAL STUDIES.

The printed account of the opening exercises at the Clark University of Worcester, Mass., on October 2, 1889, has just been received. The notable feature of the occasion was the address of the President, DR. G. STANLEY HALL, an address which is a most carefully composed plea for the profound German type of university education. Dr. Hall is an able exponent of the modern idea of laboratory research and of an elaborate preparation and foundation for medical study. That which he would require in the way of preliminary training would close the doors of the medical profession against four-fifths of our would-be practitioners, and would shut half our medical

colleges for lack of patronage. The thoroughness of the new idea is illustrated in the following extracts:

Biology explores the laws of life upon which not only these studies but human health, welfare and modern conceptions of man and his place in nature so fundamentally rest. The law of the specific energy of nerves, *e. g.* which Helmholtz says equals in importance the Newtonian law of gravity, and more than anything else made physiology the science which has had so large a share in raising the medical profession in Germany to a position in the intellectual world such as it never had before, doing for it in some degree what chemistry has done for dyeing, and even instruments like the ophthalmoscope, which almost created a department of medical practice, or the spectroscope, now indispensable in the Bessemer process, sugar refining, in wine and color-dye tests, the detection of photographic sensibilators, in the custom house and in two important forms of medical diagnosis —all these, to cut short a long list of both epoch-making laws and important instruments, are the direct products of whole-souled devotion to unremunerative scientific research.

It is hard for medical students to realize that they can not understand hygiene, forensic medicine, pharmacology and toxicology without a rigorous drill in chemistry; that they must know physics to understand the diagnostic and therapeutic use of electricity, ophthalmology, otology, the mechanism of the bones, muscles, circulation, etc.; that zoology is needed to teach sound philosophic thought, generic facts about the laws of life, health, reproduction and disease. These, and sometimes also sciences like mineralogy, anthropology and psychology, are required in Europe, with much more rigor than is common with us, of every medical student. Thus doctors, like technologists, can not know too much pure science. An eminent medical practitioner in Europe compares young physicians who slight the basal sciences of their profession and pass on to the clinical, therapeutical and practical part, to young men who grow prematurely old and sterile . . . . The young man who has had the invaluable training of abandoning himself to a long experimental research upon some very special but happily chosen point was typically illustrated in a man I knew. With the dignity and sense of finality of the American senior year quick within him, his first teacher in Germany told him to study experimentally one of the score of muscles of a frog's leg. He feared loss and limitation in trying to focus all his energies upon so small and insignificant an object. The mild dissipation of too general culture, the love of freedom and frequent change, aided by a taste for breezy philosophic romancing, almost diverted him from the frog's leg; but as he progressed he found that he must know in a more minute and practical way than before—in a way that made previous knowledge seem unreal—certain definite points in electricity, chemistry, mechanics, physiology, etc., and bring them to bear in fruitful relation to each other. As the experiments proceeded through the winter, the history of previous views upon the subject was studied and understood as never before, and broader biological relations gradually seen. The summer and yet another year were passed upon this tiny muscle, for he had seen that its laws and structure are fundamentally the same in frogs and men; that just such contractile tissue has done all the work man has accomplished in the world; that muscles are the only organ of the will. Thus, as the work went on, many of the mysteries of the universe seemed to center in his theme. . . . . .

President Hall rather impatiently remarks that while the material progress of this country has been remarkable, the higher education, including that in medicine, has been falling behind.

It has been estimated that but 5 per cent. of the practicing physicians of this country have had a liberal education, and that 60 per cent. of our medical schools require practically no preliminary training whatever for admission, while European laws require a university training for every doctor before he can practice. Again, we apply science with great skill, but create or advance it very little indeed. Should the supply of European science, which now so promptly finds its way here and fertilizes and stimulates to more or less hopeful reaction our best scholars, and upon which we live as upon charity, be cut off by some great war or otherwise, the unbalanced and shortsighted utilitarian tendencies now too prevalent here would tend toward the same stagnation and routine which similar tendencies unchecked long ago wrought out in China.

We have no right to expect the immediate carrying out of such a radical change in our system of education as is implied in these teachings and illustrations of Dr. Hall, but nobody will regret to see him hold the standard high. We need more young men whose intellect shall be equal to original research, and whose industry and love for work shall lead them to place themselves under such guidance as that of Dr. Hall and the Clark University.

THE MEETING AT NASHVILLE.

The officers of the various Sections are already moving in the matter of preliminary work incident to the next Annual Meeting at Nashville. This is well; and if the effort this year shall bring to Nashville an array of papers such as was submitted at Newport, the meeting will prove another notable success. Only those who are of the junketing order would have accused the members at Newport of such proclivities. The submission of one hundred and seventy-three papers in the various Sections, and the extra sessions held for their proper presentation and discussion, renders it evident that banqueting was

not even incidental from first to last. If such criticism was offered in sober earnestness, we submit that a more intimate acquaintance with the work done would have effectually dispelled the delusion. Attractive as were the entertainments proffered at Newport, very few of the members were diverted from the real purpose of the meeting, and perhaps never in the history of the Association was there the same amount of work accomplished, or work of greater value, than was there presented.

The number of able writers coming to commanding positions in this country is such that with due diligence the officers should have no difficulty in securing valuable papers and in such numbers as to ably represent the medical profession in every department; and we submit that the interests of the representative medical men in America will be best served by affiliation with those who there meet, and who so ably represent the various sections of this broad land. With a judicious selection of writers, and with the proper preparation of papers, the next meeting will be one of profit and in every way enjoyable.

The beautiful city of Nashville is of itself an attraction, and the culture and hospitality of its people have long been proverbial. It is the pivotal centre of the North and South, and it welcomes the East and West. The location and the fraternal feeling of the profession in all parts of the country will alike conspire to render the next Annual Meeting a notable event.

Let the entire profession of America have an able representation, and let the members come together not only for mutual acquaintance and fellowship, but, most of all, for earnest professional work. Let the meeting at Nashville represent the best elements and the best work possible. So shall it be a signal success worthy of itself and of its place of meeting.

EDITORIAL NOTES.

HOME.

CORNELL UNIVERSITY, NEW YORK.—The authorities at Cornell University have in consideration the ways and means for the establishment of a department of medicine. They wish to found a school of the highest requirements and with an endowment proportionally large. They have gone so far as to select a name for it, as follows: "The College of Medicine of the Cornell University," and they would by preference have its location away from Ithaca, either at New York City or Brooklyn. If a handsome endowment can be secured, the rest will follow readily.

A LADIES' HEALTH ASSOCIATION.—A sanitary question, which has been before the Board of Health of New York City for some time, has been that of the handling of offensive stable refuse. The ladies belonging to the Health Protective Association have attacked this deeply rooted nuisance to crowded localities, year after year, until finally they have won their victory. It has been ordained that after the 15th of May, 1890, the contents of the manure-pits of the thousands of stables in that city, must be removed either in bales or in tight barrels, tight, dry, and tightly covered. These ladies go wherever duty calls them and their courage and pertinacity have won them and their tenement-house clients many a victory.

THE INFLUENZA EPIDEMIC OF 1889.—A few cases of catarrhal disease have occurred in New York City which seems to bear a close resemblance to the influenza of epidemic origin. They will be kept under observation by the physicians of the Board of Health and an accurate record made of them. A member of that Board is reported to have said that their work of observation was about all that could be done in a sanitary way, the disease being "mainly due to atmospheric influence and we cannot quarantine the four winds of heaven." The contagious element in influenza has been asserted, but must be extremely insusceptible of demonstration in the presence of an indisputable atmospheric cause. Although the present epidemic has been called the Russian catarrh, it is known to have been in the Balkan countries before it reached Russia. It spread over Russia at a rate of speed estimated at 200 miles per diem average, and forty per cent. of the population in northern Russia has been sneezing. It has affected the adult population in a marked degree, so that in Germany it has been remarked that the school-children escaped while their teachers were the victims. As in former incursions in Europe, elderly people have been particularly liable to the disease. The domesticated animals, as horses, dogs and cats, have been affected by a catarrhal disease as well as humanity, but appar-

ently to a less extent than on some former occasions. Just as in former years, heavy fogs have, at some places, been a concomitant of the epidemic of 1889. In some accounts of the Parisian epidemic of 1733, it is stated that there were dense, black fogs which commonly set in late in the afternoon so that people went about with lanterns and candles in their hands, "and yet had much ado to find their way and their own doors." One practical point from the present epidemic that has come to us seems to be that it is just as well to get the influenza early, if it cannot be avoided, because those who have it late are said to have it with a much greater degree of severity than the earlier victims.

GOOD SAMARITAN HOSPITAL, CINCINNATI.—An addition is being built to this hospital by the owners, the Sisters of Charity, by which the capacity of the institution will be about doubled. The Good Samaritan has, through many years of patronage by the leading physicians and surgeons of the city, become almost entirely devoted to the care of private patients.

PRESBYTERIAN HOSPITAL BURNED.—On the night of December 19th, the Presbyterian Hospital of New York, had a narrow escape from total destruction by fire. Eighty patients were in jeopardy for a time, but all were removed without the loss of a life; the only persons injured, in fact, were a few fireman. Two club houses and the Seventh Regiment Armory are near at hand and were almost depopulated by the members running to the rescue, and gentlemen in evening costume and regimentals could be seen carrying stretchers with sick and wounded on them and acting the part of a life-saving corps to the best of their extemporized ability. The loss is estimated at $100,000.

FOREIGN.

THE CHOLERA IN MESOPOTAMIA.—The epidemic of cholera which has raged for several months in Mesopotamia has undergone a very marked decrease, and it is to be hoped that the sanitary condition of this province will shortly be as good as usual. It is said regarding the origin of this epidemic that the importation of the disease was due to the transportation of bodies from Bombay to the sacred cities of Nadjef and Kerbela. It is not impossible, although it has not been definitely proved that the cholera was thus introduced into Mesopotamia, but it would be an error to affirm that the transportation of bodies from Bombay by English steamers is anything new. This goes on every year and the Ottoman authorities take the necessary precautions to prevent all danger.

CHOLERA.—The *Journal d'Hygiene* of December 5, 1889, says that cholera has reached Mosul; thus the whole plain watered by the Tigris and Euphrates is invaded by the epidemic, and the epidemic will continue its march towards the south and towards the seaboard of Syria, if the winter season and abundant snows do not, by interrupting communications, play the part which is so unsuccessfully attempted by the inadequate sanitary and military cordons. Mosul is a city in direct communication with Aleppo and Damascus, but separated by the desert. It is probable that the cholera, passing through Erzeroum and Trebizond, may make its appearance on the seaboard of the Black Sea, and thence menace Europe. Moreover, information as to cholera in Persia, transmitted by two telegrams from Kermanshah, and Teheran, announce that the epidemic continues to rage at Hamadan. From Hamadan to Teheran, from Teheran to Reshd, on the Caspian Sea, communications are easy. Further, if, as it is stated, cholera is making ravages in Bokhara, from that side also the epidemic may menace Central Europe by way of Batoum.

A NATIONAL LEPROSY FUND.—It is announced that His Royal Highness the Prince of Wales intends to take the chair at a subscription dinner at the Hôtel Métropole on the 13th inst., for the purpose of appealing for public aid in the promotion of a National Leprosy Fund. It is proposed that the interest arising from such fund should be devoted to the medical treatment and care of indigent lepers in the British Empire, and that a sum of money be set apart and placed under the control of trustees for the endowment of two studentships, one student to make the United Kingdom and the remainder of Europe his field of investigation, and the other to go abroad and study the disease in India, China, the colonies, and elsewhere.

A SOCIETY of Naturalists and Physicians has been established at Tomsk, Western Siberia.

SIR WILLIAM STOKES has been appointed Examiner in Surgery in the University of Oxford.

TOPICS OF THE WEEK.

THE RUSSIAN INFLUENZA.

After the discovery, in the last weeks of October, of the first cases of the epidemic which is now raging in St. Petersburg, the disease, under the influence of an unusually warm, moist, foggy atmosphere, with prevailing west winds, spread with wonderful rapidity throughout the city. The rapid increase of sickness was soon evidenced by the great numbers of patients transported by the ambulances to the hospitals, which were soon filled to overflowing. The number of patients attacked during the three weeks which have elapsed since the beginning of the epidemic cannot be estimated even approximately, but we believe from all that we can learn that it amounts to from one-third to one-half of the entire population of the city. The disease spread with equal intensity among all classes of the populace, from highest to lowest, and apparently without the least regard to the hygienic surroundings of the victims and without a suspicion of any special predisposition toward the disease, which, if it exists at all, must be of a most general character. The universal and equal spread is manifested especially in the disturbance of all social conditions. There are few families in which one or more members have not been seized. Instruction in the schools has come to a standstill because in many of them from 25 to 50 per cent. of pupils and teachers are absent. In some instances factories have been closed, while in others work goes on with difficulty because half the employés are sick. The military hospitals are overcrowded, and many of the sick are obliged to remain in the barracks; regular drill has been interrupted. Physicians and apothecaries have displayed an unparalleled activity, and have themselves in great measure become victims to the epidemic; in short the genius epidemicus everywhere prevails. Neither sex nor age is spared, although some physicians think they have discovered a disproportionately large number of cases in the male sex, with a lessened predisposition to the disease on the part of advanced age. That children are no more exempt than adults is shown in the fact that the ambulances of our great children's hospitals have to care for double the usual number of patients, the excess being due to the epidemic.

The occurrence of this epidemic is perhaps associated with the long continued duration of low water. The disease spreads apparently in a miasmatic manner, the miasm appearing to be of a rapidly spreading and transitory character. It is questionable whether it spreads earlier and more rapidly to low-lying quarters, the facts in this connection being of a contradictory character.

It is impossible, as yet, to say whether the disease spreads by contagion, because it has been distributed everywhere in an equable manner. On the one hand numerous cases have been reported where only one member of a family has suffered, while, on the other hand, cases are reported in which one member after another was stricken down.

The period of incubation, as definitely determined in the case of new arrivals to the city, is two days. The prodromal stage is short, often lasting only a few hours. It is recognized by weariness, headache, chills, etc., as in other infectious diseases. The complex of symptoms is various, and the cases of the disease may be divided into three groups. Common to all, however, is the appearance of general nervous symptoms, such as severe prostration and weakness, with pain in the limbs, headache and sometimes dizziness, and a variety of nervous sensations (such as hyperæsthesia), which are not always in correspondence with the fever, which is transitory and often of moderate degree. The fever generally comes on suddenly and often reaches a height of 40° or 40.5° on the first day, to fall as suddenly again; or it may remain high for a couple of days and then disappear quickly. The fever lasts from one to three days, rarely from five to six days. An enlargement of the spleen is observed in most cases.

The three groups of symptoms above mentioned are characterized as follows:

1. *The Purely Nervous Form.*—The general symptoms arising from the nervous system are very conspicuous. Sometimes the pains are of a neuralgic character and simulate a beginning pleuritis, etc. The respiratory and intestinal mucous membrane is entirely normal. This form is especially frequent and has often led to a mistaken diagnosis of insipient typhoid fever.

2. *The Form Characterized by Catarrhal Affection of the Respiratory Mucous Membrane.*—Bronchial catarrh, snuffles and conjunctivitis develop with the fever (or sometimes only become conspicuous after its abatement) and last generally four days after the disappearance of the fever.

3. *The Gastric Form, with Catarrhal Affection of the Digestive Tract.*—This sets in with frequent vomiting which may last from one to two days.

Special symptoms have been observed as follows: Herpes of the lips and nose occurs as a common symptom; herpes of the eyelids seldom occurs; erythema, roseola; urticaria, etc. As complications, though upon the whole of rare occurrence, these have been reported: meningeal irritation, catarrhal pneumonia; this last has been the cause of death in the few cases which have had a fatal termination.

Aside from the well-marked cases a great number of mild cases have of course been observed—cases in which only a portion of the above decided symptoms have been manifested, and these only in moderate degree and soon giving way to complete euphoria.

Convalescence in the typical cases occurs in varying manner, depending largely upon the severity of the attack and the character of the treatment adopted. Many patients feel quite prepared to resume their ordinary duties upon the day after the cessation of the influenza; in others the catarrh and nervous symptoms persist for days. Relapses also occur in some cases; the patient may be free from fever and feel relatively well when, on the sixth or seventh day, the fever and chill return and the catarrhal symptoms again appear.

In the therapeusis of this disease the principal rôle is played by quinine and antifebrin (0.5 grm. two or three times a day); these have the advantage of cheapness and

are therefore well suited to the poor. The other remedies chiefly relied upon are antipyrin, salicylate of sodium and similar preparations, and diaphoretics. The results effected by all these remedies have been vaunted. The laity has by this time become sufficiently acquainted with the therapeusis of the disease to undertake in some measure its own treatment, the result being that the retailing of quinine has reached enormous proportions (*e. g.*, 1 lb. in two days by the average apothecary), and the supply of dried raspberries is almost exhausted.

This brief sketch of the present epidemic, based upon communications from our colleagues, especially those received in the General Society of St. Petersburg Physicians, will require to be corrected and completed by further experience. Until then we shall add nothing to it. Regarding bacteriological work during the epidemic with a view to discovering the bacillus of influenza nothing is yet known, and we can only hope that the great burden at present devolving upon our physicians will not render such work impossible.

Reports are now coming in of the spread of the disease to other Russian cities—Moscow, Wilna and Kasan.—*St. Petersburger Med. Wochenschrift*, November 30, 1889.

DEATH OF PROFESSOR VON VOLKMANN, OF HALLE.

On Thursday, November 28th, RICHARD VON VOLKMANN, the illustrious surgeon of Halle, died at Jena, in the "clinicum" of his friend Binswanger. He held a leading place among the surgeons not only of Germany, but of Europe. He had witnessed and taken part in the development of modern surgery from its beginning forty years ago to its present flourishing condition. During his student days Simpson introduced chloroform into medical practice, and about the same time Langenbeck and Stromeyer laid the foundation of modern military surgery in the war of Schleswig-Holstein. The routine practice of amputation in nearly every case of fracture of one of the extremities was then first abolished by the introduction of excision of the joints. Langenbeck gave directions to the German surgeons to preserve as much as possible of the wounded limb, even if the time of cure was very protracted.

Volkmann followed in the footsteps of these great masters through his whole life. His researches on the treatment of joint disease and his method of permanent extension form the basis of his reputation as a surgeon. He was one of the first to accept the doctrines of Lister, and to his enthusiastic advocacy it was largely due that the theory and practice of surgical antisepsis were so quickly and so universally adopted in Germany. Volkmann not only accepted Lister's teaching, but he simplified the details of the method in several important particulars.

Though Volkmann's favorite province of professional activity was the surgery of bones and joints, his scientific interest was by no means confined thereto. He investigated and wrote on erysipelas and lupus and on malignant tumors, especially cancer. He was working at the latter subject in the last few weeks of his life. His vast experience made his opinion valued by all practical surgeons, and the part he took every year in the debates at the Surgical Congress at Berlin always contributed greatly to the success of these meetings.

Volkmann was exceedingly skilful and elegant as an operator; he was fertile in resource and a great inventor of new procedures. His pupils idolized him, for he was not only a teacher who joined the greatest elegance with the highest clearness of diction, but he was up till his death the students' sincere and warm-hearted friend.

In spite of his high rank in society and in the hierarchy of science, he remained a *Bursch* to the last. In Halle many amusing stories are current about Volkmann's good humor. In the midst of his overwhelming professional work he found time to gain the laurel wreath of a poet. His *Träumereien an französischen Kaminen*—tales which he sent home to his children during his sojourn in France in 1870 and 1871—were published under the pseudonym "Richard Leander," and had a great success. His *Lieder aus dem Saalethal* added to his literary reputation, and many of his fairy tales, told in the first instance to his own little ones, found their way to the hearts of German children.

In Volkmann Halle has lost its chief medical attraction, the German army one of its foremost surgeons, and the art of surgery one of its most brilliant exponents.—*British Medical Journal.*

PHYSICAL TRAINING IN PUBLIC SCHOOLS.

The Fourth Annual Report of the Board of Health of Maine contains a useful paper by DR. F. N. WHITTIER, Director of the Sargent Gymnasium at Bowdoin College, on "Light Gymnastics for Schools." Dr. Whittier repeats the arguments (no less weighty because they have been given before, and no less important because they are habitually disregarded by school boards), in favor of systematic physical training in the public schools. For a striking confirmation of the proposition that such training improves the mental power of its subject he cites an experiment recently carried on by Dr. H. D. Wey at the New York State Reformatory at Elmira. Wishing to give the theory a fair test, Dr. Wey selected twelve of the dullest boys in the school and gave them a thorough course in physical training, the boys themselves having no knowledge of the object of the experiment.

Their average rank in their studies for the five months immediately preceding the experiment was about 45 per cent., while during the five months' course in physical training their average was 74 per cent., and what is still better, they maintained their advanced standard during the six months following the discontinuance of the course; thus showing that the effect was permanent. In his report Dr. Wey says: "With physical culture and improvement there came a mental awakening, a cerebral activity never before manifested in their prison life. Their faces parted with the dull and stolid look they had in the beginning, assuming a more intelligent expression, while the eye gained a brightness and clearness that before was conspicuous by its absence."—*Boston Med. and Surg. Journal.*

PRACTICAL NOTES.

THE INFLUENZA.

In the *Medical News* of Dec. 28, Prof. Roberts Bartholow, of Jefferson Medical College, contributes an able and interesting article upon the history, pathology and treatment of the epidemic which at the present hour is commanding the attention of the laity as well as the profession in both hemispheres. From the paper referred to we make the following extract:

"Influenza comes suddenly; goes as quickly. The least robust, at any age, and women seem to be the first victims. It is here a question of bodily condition, not of the sex. The large numbers simultaneously attacked attract general attention, and thus the most impressionable are seized, the onset being facilitated by any depressing emotion, like fear or illness. There is no rigor, properly to be thus designated, but rather a series of light chills and a feeling of heat therewith. Sometimes malaise of a general kind is experienced, but, like the attack itself, is short in duration—lasting but a few hours. With the first access of the nasal and faucal irritation comes the chilliness, which is followed by some feverishness, with more pronounced malaise, and, in general, the headache, weakness, and soreness of the members, especially of the larger joints. With the progress of the case in some epidemics there is considerable general weakness, even marked depression of the vital powers. The pulse becomes small and weak, the mind gloomy, and restlessness ensues. When a fatal termination is to occur, as a rule, an extension downward into the trachea and bronchi takes place. Although catarrhal and croupous pneumonia are said to be "complications," they should be regarded as occasional conditions, and when present are, properly speaking, constituent parts of the malady. The chief importance of croupous and catarrhal pneumonia is that the development of these, out of an existing catarrh of the bronchi, is frequently a cause of death. The rapidity with which the disease supervenes—its preliminary development being hours, and its whole career but a matter of three or four days—is remarkable. Relapses are common, usually each succeeding attack being milder, but not a few pass by easy transition into chronic bronchitis, emphysema, asthma, etc. Obviously a catarrhal process, extensive and severe, may contribute immensely to chronic disease of the middle ear, Eustachian tube, nose and throat, and thus permanently damage the parts. The best manner of securing immunity is by the inhalation of sulphurous acid gas daily when the approach of the epidemic renders it necessary, and by taking five grains of salicylate of cinchonidine three times a day, and by so living as to avoid taking cold. When the attack has begun, it seems to me desirable to give one or two grains of calomel at night, inhale some sulphurous acid gas, and have the patient sit in a room where steam containing eucalyptol can be inhaled in large quantities. The insufflation of resorcin by dusting over the entire area of affected parts as far as practicable, is also recommended. The internal remedy most desirable is atropin in solution, one grain to one ounce of water, dose being from one to five drops, the minimum being for little children (after first detention). The tincture of belladonna may be used—from one to ten drops twice a day. As the medicament is prompt and prolonged in action, it should be given not more than twice a day, unless the dose be much smaller than is advised above. Salicylate of cinchonidine and quinine should be given as a prophylactic remedy, if there be reasons to suppose that such power is really expected by it. My own conviction is that as a prophylactic the combination of cinchonidine with salicylic acid is preferable to quinine. For the depression and melancholy it is probable that atropia will do better. For the distressing headache, joint pains and wakefulness, antipyrin, acetanilid, phenacetin, and other remedies and antiseptics will, no doubt, be found useful.

ACETATE OF LEAD IN PNEUMONIA.

PROFESSOR CROCQ, of Brussels, has found that a remedy which was formerly a good deal employed in pneumonia, but which has long fallen into complete disuse—viz., acetate of lead—is in many cases of great value. This remedy was prescribed, combined with opium, by Ritscher, and afterwards by Strecht, Leudet and others. Nothnagel and Rossbach mention it in their handbook, but consider that it is useless in ordinary cases, though they recommend it where there is œdema of the lung and in the hæmorrhagic form of the disease. Professor Crocq, having prescribed the lead salt in a large number of cases, is convinced that it frequently reduces the heart beats as much as ten or fifteen per minute in a single day, and that it exerts an equally marked effect upon the temperature, the sputum, too, becoming less in quantity and less deeply tinged. Instead of producing constipation, it is far more likely to open the bowels, but, notwithstanding, this action, there is no objection to prescribing it with a little opium in cases where diarrhœa is present, or, if preferred, trisnitrate of bismuth may be added instead of opium. Small doses are of very little use, the minimum quantity that should be ordered for an adult per diem being six grains, and this may sometimes be increased with advantage to as much as fifteen grains. This treatment may be continued for a fortnight without any symptoms of lead poisoning presenting themselves. Professor Crocq re-

marks that it may be given at all stages of the disease, but at the beginning in strong subjects, and when the pain is severe, its action is but slight, and so antimonials are to be preferred at that time. Where, however, resolution is delayed, when there is but little fever, where the patient is very weak, where there is enteritis or diarrhœa, and especially where the digestive organs will not tolerate antimony, acetate of lead is very valuable. Again, when the pneumonia is secondary to some other serious disease, and when the heart is acting insufficiently so that the pulmonary circulation is interfered with, as in Bright's disease, in organic affections of the heart, drunkards, and in old people, acetate of lead will sometimes work wonders; indeed, he considers that it is most valuable in serious cases. Of course it must sometimes be combined with alcohol.—*The Lancet.*

ETHER IRRIGATIONS IN STRANGULATED HERNIA.

Dr. Ivan N. Drakin (*The Annals of Surgery*, August, 1889) eulogizes ether irrigations as an excellent means for reduction of strangulated hernia. He simply pours a teaspoonful of ether over the hernial tumor every quarter or half hour, keeping it covered with compresses during the intervals. As a rule, after three or four tablespoonfuls, the intestinal loop slips down into the abdominal cavity by itself; in some cases, however, slight pressure should be applied. In the case of incarcerated scrotal hernia, it is advisable to irrigate with a mixture of ether (twenty parts) and hyoscyamus oil (four parts). When applied sufficiently early, the method is said to give most brilliant results.

Dr. A. J. Brustein (*Ibid.*) describes the case of a woman with an incarcerated umbilical hernia of the size of a man's fist, in whom, after all ordinary procedures for reduction had failed, irrigation with a small jet of ether was resorted to, taxis being continued at the same time. In three or four minutes the reduction was effected with striking ease. The action of local etherization was attributed to a rapid contraction of the intestinal wall, and to the diminution in volume of the hernial gaseous contents caused by the sudden lowering of temperature.—*Am. Journal Medical Sciences.*

PAPULAR ERYTHEMA.

℞ Talc.
Oxide of zinc.
Powdered starch. . . . . ãã 100 grams.
Boric acid. . . . . 3-6 " ℳ

Bathe the surface with a solution of boric acid, and then sprinkle on the powder.

To prevent the affection so common in the newborn, apply a pomade composed of equal parts of vaseline and oxide of zinc.—Besnier, *Gaz. Méd. de Liège.*

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, Oct. 18th, 1889.

A. B. JUDSON, M.D., CHAIRMAN.

RACHITIC PSEUDO-PARALYSIS.

The paper of the evening was read by DR. H. W. BERG, who stated that in this affection the rickety child from two to five years old, is unable to walk, and in some cases he cannot stand or even sit. The disability is not the result of nervous lesion but rather the result of muscular weakness, pain in the muscles and in the bones at the points of muscular attachment, flaccidity of the ligaments, and softness of the bony levers. Such a child wished to be let alone, he instinctively prefers to keep quiet. This condition is to be distinguished from infantile paralysis; by the absence of local atrophy and cold and real paralysis not so readily, however, from post-diphtheritic paralysis where the differential diagnosis will rest on the preceding occurrence of diphtheria, the recent origin of the paralysis, and, above all, on the difficulty of swallowing and speaking dependent on involvement of naso-paryngeal and laryngeal muscles. Spastic paralysis even when mild has an exalted muscular activity which serves to distinguish it from rachitic pseudo-paralysis; and the paraplegia of Pott's disease cannot be mistaken if the kyphosis is obvious. The prognosis is uniformly favorable. These are the cases which give such good results after indiscriminate circumcision. The object of treatment should be to counteract the effect of rachitic malnutrition. These children should have a great deal of milk; cod liver oil should be given unmixed; and phosphorus in the following prescription:

℞ Phosphori . . . . . gr. j.
Alcohol Absolut. . . . . ℥ cccl.
Spt. Menth. Pip. . . . . ℥ x.
Glycerinæ . . . . . ʒ ij.

℥. et Sig. Six minims t. i. d. to be increased one drop weekly until ten drops are given.

DR. W. L. CARR had seen a number of cases in which a striking lack of muscular power was symptomatic of rickets although bone changes were not obvious. A number of these children had been fed at the table or on patented foods. Proper attention to diet soon brings about a restoration of muscular power without tonics.

DR. R. J. DEVLIN recalled well marked cases of this affection in children who had been exclusively fed on milk from a healthy mother.

NERVOUS SYMPTOMS PRODUCED BY PHIMOSIS.

DR. T. H. HOLGATE said that in his experience with non-rickety children, the relief of preputial irritation by discriminating operative

interference had removed serious nervous troubles. In one case, which he had presented to the Academy, inability to walk or stand had been relieved in this way in a child who was entirely free from evidences of rickets.

DR. R. H. SAYRE related a similar case of a boy, who from some central lesion had not walked for some years. After partial circumcision he could walk with the aid of two canes. A trouble of twelve years standing had thus been relieved in six weeks.

DR. BERG closed the discussion. He agreed with Dr. Carr in thinking that rachitic inability to walk is sometimes present without the usual rachitic deformities. He recognized the fact that urinary troubles occur as the result of contracted prepuce, but he had never seen a case of lesion of the nervous centres cured by circumcision. He recalled a case of difficult micturition and inability to walk in a rickety child whose phimosis was not relieved because the operation was refused. The difficulty in micturition persisted, but the child walked within eight weeks after being put upon proper diet.

EXCISION OF THE HIP-JOINT.

DR. R. H. SAYRE presented a little boy on whom Dr. L. H. Sayre had operated by excision of the hip-joint. About a year ago the patient had presented himself with the hip very badly deformed from long standing disease. The thigh was flexed on the trunk at a right-angle, and abducted. A deep abscess was opened behind the trochanter, and the acetabulum and femoral head were then found to be badly eroded. The femur was divided above the lesser trochanter, at right-angles with the axis of the shaft, and the deformity was thus reduced by excision instead of by simple tenotomy which had been proposed at first. The wound was stuffed with iodoform gauze and after two months of the wire cuirass, a long traction splint was applied and the boy took a long journey to his home. At the present time there is no abduction, and but a trace of flexion with some motion in the joint.

TREATMENT OF ABSCESSES.

DR. JOHN RIDLON asked whether an operation would have been advised for the abscess alone. He had found that many abscesses are certain to disappear when the hip is properly treated mechanically.

DR. SAYRE said that as the abscess was causing but little disturbance, he would have postponed operating on it if the child could have been kept under observation.

DR. JUDSON thought that opening an abscess, if done at all, should as a rule be followed by excision, as in the case related by Dr. Sayre on the ground that the presence of diseased bone is a greater evil than the presence of pus. He had seen no bad results follow letting the abscess alone.

DR. A. M. PHELPS said that there were some cases of abscess which he would probably not open at once, but he believed the operation perfectly harmless and desired to speak emphatically against the opinion that it is a dreadful and dangerous thing to open these abscesses.

DR. H. L. TAYLOR thought that if rest and protection are secured for the joint, the occurrence of abscesses is not of serious import. The aspirator had failed in his hands apparently because it leaves shreds of nercotic tissue which prevent the abscess from closing. It seems wise in most cases to open freely, clean out easily removable débris, and close the wound. If sinuses remain, injections with a saturated solution of iodoform in ether will sometimes cause them to close.

DR. L. A. SAYRE said that on the principal that an empty house is better than a bad tenant, he always evacuates an abscess as soon as found, and by doing this antiseptically, and securing thorough drainage, there is no danger of bad results.

DR. R. T. MORRIS said his usual custom is to open these abscesses at once, washing out with peroxide of hydrogen, removing débris, and establishing drainage. He related a recent case in which this procedure, followed by traction in the line of the deformity, had secured a good result. He had recently performed excision in another case in which disease of the acetabulum and femur had been produced by the application by the physician in attendance of traction in a straight line, according to Thomas' method. In excising the hip, he usually makes a section through the great trochanter in such a way as to allow the lesser trochanter to go into the acetabulum and so prevent the formation of a flail joint.

THOMAS' SPLINT.

DR. RIDLON did not think Thomas, of Liverpool, made traction in any line.

DR. PHELPS said that Mr. Thomas would treat a case when the leg is flexed at right-angles, by lashing the patient to the splint, and then with his wrench bending the splint down as nearly as possible to a straight line. That is a form of traction which produces great intra-articular pressure and would if continued for any length of time, produce destruction of the joint.

DR. RIDLON said that he had used Thomas' hip splint in some twelve or fifteen cases with great satisfaction. He found it cheap and easily applied. It had not caused destruction of tissue, but on the contrary, had relieved symptoms and prompted recovery.

DR. L. A. SAYRE said it seemed as if the profession were determined to misunderstand him, for he had endeavored for years past to make

clear what he meant by traction in the line of the deformed limb: it is to make traction in such a way as to separate slightly the bone from the base of the acetabulum, and so prevent pressure, gradually changing the line of traction until the limb is brought parallel with the other limb, and then apply the splint; whereas, if one employed leverage as Thomas does, this pressure in the joint is only increased. Not until the limb is in proper position, can the splint be applied to advantage. One objection to Thomas' splint is that there is no traction for overcoming muscular rigidity, and hence, it seems to be fixation only, and as such does not compare in point of efficiency with properly applied plaster of Paris splints for, here the weight of the limb will produce some traction and the plaster of Paris gives the necessary fixation. Another objection is that the patients wearing Thomas' splint cannot sit down, whereas with a properly applied splint they can sit down with great comfort.

THE QUESTION OF EXCISION.

DR. R. H. SAYRE said that in the case presented the original intention had been simply to open and drain the abscess; but the diseased condition of the bones necessitated excision. As regards the conditions under which he would advise excision, if the leg were straight and the abscess causing but little disturbance, he would postpone the operation, provided the patient could be kept under observation; but if the latter condition could not be secured, he would be disposed to remove whatever disease already existed rather than allow the case to go from under observation with the disease ready to extend at any time.

DR. BERG thought the good condition of the patient in the present case justified operative procedure for the correction of deformity.

DR. TAYLOR thought that excision might be required in neglected cases, of which there probably always will be a considerable number; but the operation should be looked upon rather as treatment of the results of neglect than as treatment for hip disease.

DR. PHELPS practiced excision by an open wound, leaving the periosteum to reproduce bone. The German surgeons remove the periosteum and capsule and try to secure union by the first intention. Their results are shortening, flail joints, and relapses in a large per cent. of cases. He related two recent cases of excision in patients 34 and 23 years of age. In these cases the femoral head was destroyed and the acetabulum extensively diseased, a condition in which removal of the disease is the most rational treatment. In one of the cases, the head was found separate from the shaft. He had frequently found this condition, and believed that the head lying loose in the joint cavity is to be considered as a foreign body. It is better to remove it than to leave it to undergo decomposition and lead to septicæmia and amyloid disease. A more useful limb is left if the exsection includes the trochanter. In general, he thought excision under the age of 10 is a calamity. In the case presented, however, he thought the result was good, as extreme deformity had been corrected.

DR. JUDSON thought that in excision we have no certainty of removing, together with the diseased bone, those portions which contain latent foci. He had found no method of determining whether the focus which has burst into inflammation is the only outbreak to be feared, or whether it is to be followed by others. In some patients a single abscess closes the morbid process; in others, one abscess follows another, showing that osteitis is lighted up successively in the neck, the head, the shaft, and the bones of the pelvis. An excision may fortunately remove all that is diseased, with a good immediate result; or it may leave dormant foci which come into activity one after another, and lead to a tedious and unfavorable result. Ultimate good results are obtained in these difficult cases by management with the hip splint, and without excision.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Chloralamid—Lepers and Leprosy in Norway—A Myxoma Springing from the Infra-orbital Nerve—Does Moderate Drinking and Long Life go Naturally Together?—Miscellaneous Items.

Some recent experiments with the new hypnotic, chloralamid, on frogs and rabbits tend to show that the drug is completely harmless to animals; also that the blood pressure is not materially altered. This being the case, the drug has been tried on a few patients who complained of sleeplessness. The sleep after chloralamid was deep and refreshing; its duration varied, according to individuality, between six and ten hours. The patients awoke without feeling the slightest indisposition, without headache or indigestion, or bad taste in the mouth, as frequently observed after chloralhydrate. Even very delicate patients with weak stomach did well with chloralamid, which is stated to be due to the fact that the drug is non-irritant to mucous membranes, not even to those of the most delicate structure, as the conjunctiva of the eye. In some comparative investigations into the value of chloralamid and sulphonal the former has been found to be much superior to the latter. Chloralamid is recommended in all cases of sleeplessness which are the consequences of nervous excitation of a slight de-

gree, or of organic disease (phthisic, heart disease, spinal affections), or of neurasthenia, as also in all cases of insomnia which are not associated with vehement excitation or acute physical pain.

A deeply interesting article appears from the pen of Dr. Robson Roose on "Lepers and Leprosy in Norway." The author is distinctly of opinion that it is contagious and that there is no known medical treatment for its cure, and that isolation is the only effective measure of extirpation. In his final conclusion Dr. Roose states: "There is only one plan by which the disease can be eradicated—the construction of a sufficient number of leper hospitals and the compulsory detention of the sufferers." Sir Morrell MacKenzie has been dealing with the same subject, and is in entire agreement with Dr. Robson Roose as to the contagious nature of the disorder and the absolute necessity of measures to prevent its transmission. "The contagiousness of the disease," he writes, "was never doubted till it had nearly died out. The alarming spread of this loathsome pest in recent years is, in my opinion, due to the fact that for some time the opposite doctrine gained the ascendancy. For this pernicious error and all the disastrous consequences that have flowed and continue to flow from it the Royal College of Physicians of London is chiefly responsible."

Mr. Bland Sutton, at the Clinical Society of London, recently related a case in which a woman was supposed to be suffering from neuralgia due to bad teeth, but which was really a tumor of the infra-orbital nerve. A slight displacement of the eyeball was detected and a critical examination of the patient led to the diagnosis of a tumor entangling the infra-orbital nerve; the skin supplied by the palpebral, labial and nasal branches of this nerve was anæsthetic. Agonizing pain was experienced. Mr. Sutton removed the anterior wall of the maxilla and found the antrum occupied by a lobulated tumor. The whole of the maxilla was then removed and Meckel's ganglion exposed and destroyed by the cautery. The patient did well and made a complete recovery. Subsequent dissection of the tumor showed it to be a myxoma springing from the infra-orbital nerve and invading the orbit and antrum.

The British Medical Temperance Association meeting in the rooms of the London Medical Society has been controverting the statistics which recently attracted so much attention, showing apparently that moderate drinking and long life went naturally together. Dr. W. B. Richardson, who presided, vigorously challenged the recently revived contention that a longer span of life falls to the lot of moderate drinkers than to that of total abstainers. The report subsequently read by the Hon. Sec., Dr. I. I. Ridge, certainly went far to controvert this notion. In reply to a question addressed to 279 workhouse medical officers, "Under what circumstances are alcoholic liquors allowed to the inmates of the workhouses under your control?" 244 answers were received, from which it appears that 75 per cent. give alcohol for the sick only, 8 per cent. to the aged and infirm, 12 per cent. to the aged for extra work, and 5 per cent. never give any. The second question related to the health of the paupers; thus answered, out of 203 returns 73 state that it was unaffected, 2 that it was worse, and 3 that the sick suffered from being deprived of alcohol. With reference to a question touching the longevity or otherwise of pauper imbibers, 223 answers are forthcoming. Nineteen assert that life is prolonged, 160 that it is unaffected, 29 that it is shortened, and 15 that it is certainly shortened in the case of sick persons.

A considerable excitement has been aroused by the finding of two men dead in Leeds in a cabin in the premises of the Leeds Forge Company, where "water gas" was used as an illuminant. In accordance with instructions, several medical men proceeded to a room at the forge, in which a band practices, to make a post-mortem examination. After being in the room a short time one of them sunk down unconscious, and whilst the other medical men were attending to him several of them felt unpleasant symptoms of more or less urgency, one of them becoming unconscious. The special proceedings were stopped and the room sealed up. In accordance with instructions from the Home office, Dr. Stevenson, of Guy's Hospital, proceeded to Leeds and the post-mortem examination has been concluded. Dr. Stevenson has removed some of the viscera for examination and analysis. It is hoped he will be able to throw light on this mysterious matter.

There was a good deal of difference of opinion elicited before the Royal Commission on the Blind and Deaf and Dumb in regard to the perpetuation of blindness and deafness and dumbness by the intermarriage of the sexes thus afflicted. Some witnesses were of opinion that the intermarriage of two blind people or two deaf and dumb people had a decided tendency to perpetuate in their offspring these afflictions.

The result of extensive experiments in the German army as to the best treatment for excessive sweating of the feet has been to prove the great superiority of chromic acid over all other applications. Of 18,000 cases in which chromic acid was used 42 per cent. were reported "cured," 50 per cent. "improved," and only 8 per cent. "unrelieved." The method is first to bathe the feet, and after being thoroughly dried a 5 per cent. solution of the acid is applied with a brush. Two or three applications suffice as a rule, but the treatment has sometimes to be repeated after a fortnight.

During the month there will be some interesting discussions at the Medical Society "On the Diagnosis and Treatment of Aneurisms of the

Arch of the Aorta." Dr. R. Douglas Powell will open the discussion, and a subsequent meeting will be devoted chiefly to the exhibition of cases of aortic aneurism.

A bacillus has been discovered in sections of warts, which is always present in the prickle layer. It has distinctive qualities as regards its capacity for color, and is found both between and in the cells. G. O. M.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Section on Practice of the Academy of Medicine —The New Expectorant, Cocillana—Dr. D. C. Cocks on Eye Symptoms as Aids to Diagnosis.

At the last meeting of the Section on Practice of the Academy of Medicine Dr. R. W. Wilcox read a paper on "The New Expectorant, Cocillana," in which the results given were founded on his own clinical experience. The preparation used was the concentrated tincture, but he stated that he thought the fluid extract would be preferable on account of the absence of alcohol. The source of this drug, he explained, was the bark of an undetermined species of guarea, which was discovered in Bolivia in 1886 by the eminent botanist, Professor H. H. Rusby, of the College of Pharmacy, who first brought specimens to this city.

The principal physiological action of the drug in its crude state (powdered bark), Dr. Wilcox said, was the production of nausea, with metallic taste in the mouth; this nausea being accompanied by an early discharge of mucus and later by dryness of the throat. Its action might be stated, then, to consist of stimulation for some hours of the vessels and glands of the mucous surfaces, more especially of the respiratory tract, with subsequent diminution of activity (sedation). The dose of the concentrated tincture of the bark employed by him varied from ½ a fluid drachm to 2 drachms, given every two to eight hours. Having made a comparison of the effects of the drug with those of apomorphia in acute bronchitis, he stated that the expectorant effect of cocillana was not the first stage of the nausea, as was shown by the fact that an increase of appetite was usually observed even under full physiological doses, while the fulness of the pulse remained unchanged.

He related a number of cases in which cocillana was used, and went on to say that it was probable that in subacute and chronic bronchitis would be found the larger field for its employment. The facts that its expectorant effect was more sure than apomorphia or ipecacuanha in liquefying bronchial mucus, that it increased the appetite, and that it acted to some extent as a laxative, all commended it to favor. In cases of senile bronchitis, however, particularly when the costal cartilages are calcified, it might so markedly add to the bronchorrhœa as to be positively dangerous; especially as it was not, like belladonna and strychnia, a stimulant to the respiratory centres.

Having related another series of cases, Dr. Wilcox said it could be seen that in chronic pulmonary disease cocillana had almost its only use in liquefying bronchial secretion and relieving the acute exacerbations of associated chronic bronchitis. Under its administration the cough and expectoration diminished, the appetite increased, and the night sweats and constipation were relieved. In conclusion, he stated that he believed cocillana to be superior to apomorphia, except in cases of acute bronchitis treated within the first forty-eight hours. It was certainly preferable to ipecacuanha in that it did not so readily cause nausea and metallic taste in the mouth, and moreover assisted regular movement of the bowels. It must yield to carbonate of ammonia in chronic senile bronchitis, although the heart-beat and pulse became stronger under its use; nor could it stimulate the respiratory centre like strychnia. It was immeasurably safer in every stage of acute bronchitis than pilocarpin, because it did not depress the heart's action. On the whole, he believed that it could fully replace ipecacuanha in every sphere of action, and that in many cases it could with advantage be substituted for apomorphia, carbonate of ammonia, strychnia and other drugs classed with more or less reason as expectorants.

Dr. Rusby, the discoverer of cocillana, who was present by invitation of Dr. Wilcox, exhibited some of the bark of the plant and also herbarium specimens showing the leaves and fruit. He then made some remarks in the course of which he said it was his own practice, if a case of bronchitis came under observation early, to push the cocillana vigorously, giving from 15 to 45 minims of the fluid extract every hour for twelve hours, if necessary. At the end of six or seven hours it could usually be seen whether it was going to have the desired effect or not. In Bolivia his attention was first directed to the drug by the natives. As soon as he could get the opportunity he commenced experimenting with it upon his friends, in doses of 20, 30 and 40 grs. of the powdered bark; and he found that these accounts were for the most part fanciful. He found, however, that the inhabitants sometimes gave it in such enormous doses as to destroy life by the vomiting and purging it occasioned. He said, in conclusion, that he had anticipated that cocillana would prove a very useful remedy in pharyngitis and laryngitis, as well as in bronchitis; and in this he had not been disappointed.

The principal paper of the evening was by Dr. D. C. Cocks, on "Eye Symptoms as Aids to Diagnosis." The indifference of a large number of medical men to the eye, he said, was probably due to a lack of appreciation of the important bearing that eye symptoms have on diagnosis and treatment. Many physicians seemed to think that the eye was too delicate an organ to be treated by any but a specialist, and with the determination to turn all cases of eye trouble over to the specialist at once they felt their conscience clear to let its anatomy, physiology, diseases and treatment drop entirely out of mind; forgetting how important a knowledge of the eye and its diseases was in the diagnosis of many of those diseases which they were daily called upon to treat. He therefore proposed to bring to the notice of his hearers an outline of the more important facts about the eye and its diseases a knowledge of which was essential or helpful in diagnosis.

Diagnosis, he went on to say, was sometimes made from one pathognomonic symptom; at other times it could only be made by a careful study of the symptoms for months or years. It was therefore evident that an organ like the eye, which in some cases gave pathognomonic signs and in others symptoms which proved to be the key to the situation, could not well be turned over to the specialist on all occasions. Dr. Cocks then discussed in turn, with more or less completeness, the diseases of the lachrymal apparatus, the lids, the orbit, the muscular apparatus, the cornea and sclera, the uveal tract (iris), ciliary body and choroid, the lens, the vitreous, and the retina and optic nerve; and also took up a number of individual diseases, general in character or located in other parts of the body than the eye, and pointed out the importance of the eye symptoms that might arise in connection with them.

In speaking of the derangements of the ocular muscles he said that, as a rule, they sympathize with the general system, and wonderful results were sometimes obtained by the relief of oculomuscular strain, where this had been the exciting cause of various symptoms in nervous individuals whose health had been below par. The correction of insufficiencies by prisms or tenotomies would often give an entirely new aspect to cases that were previously obscure. When all the external muscles of the eye were paralyzed we had ophthalmoplegia externa, a disease, not of the eyes, but of the central nervous system; the nuclei of the third, fourth and fifth nerves in the floor of the fourth ventricle and the aqueduct of Sylvius being implicated. A recurring paralysis of the fourth, or third, or sixth, was frequently the first indication of spinal or of general sclerosis. The nerves supplying the ocular muscles traversed the cranial cavity for such a distance that frequently the first symptom of a basilar trouble or intracranial disturbance was evinced by the paralysis of one or more of the muscles supplied by them; and the progress of which growths could often be watched by the successive involvement of the different muscles, while the exact location of the neoplasm was thus accurately marked out. The nature of the diseased condition also could often be diagnosed by the grouping of symptoms aided by the condition of the muscles.

While treating of the interior of the eye Dr. Cocks expressed the opinion that the ophthalmoscope should be in the hands of every practitioner, and as illustrating the facility with which a knowledge of its application might be acquired he stated that he had had medical students clearly describe the fundus of the eye after a single lesson. A choroiditis of the macula of each eye, whether occurring synchronously or consecutively, he went on to say, was almost pathognomonic of syphilis, either congenital or acquired. Its early recognition was of the utmost importance to the patient, and as the changes could be readily seen (when looked for), he had a right to feel aggrieved if his central vision was lost through neglect. In regard to the normal fundus, he could only say that its negative value in diagnosis could be properly appreciated only by those accustomed to look to the ophthalmoscope for aid.

Probably the most interesting part of this subject was the light thrown on intracranial changes and on general diseases by changes in the retina and optic nerve. The neuroretinitis of Bright's disease, with its accompanying and almost pathognomonic changes in the neighborhood of the macula, were now well known, and were of sufficient importance to demand the attention of every practitioner. Having referred to the retinitis of syphilis, he said that optic neuritis, especially if double, was one of the greatest aids to diagnosis, and related an illustrative case in which the patient suffered from vomiting and slight headache, with vertigo at times, and in which, after careful examination, he pronounced the condition ophthalmoplegia externa, and the lesion therefore nuclear. Shortly afterwards, however, he found double optic neuritis; which overthrew the nuclear theory, and established that of a slowly growing neoplasm.

In speaking of disorders of function he said that a central scotoma for red was almost pathognomonic of tobacco poisoning. Night blindness occurred in commencing atrophy of the optic nerve, in extreme cases of anæmia from fasting, and in retinitis pigmentosa. Word blindness, as a rule, accompanied lesion of the cortex cerebri; while acquired partial or complete color blindness was indicative of nerve atrophy. When monocular hemianopsia existed the condition was probably one of intraocular lesion, such as detached retina, etc.; but when binocular hemianopsia was present, an intracranial lesion certainly existed,

and this lesion was along the optic tract or in the occipital lobe of the same side as the loss of vision.

In the discussion following Dr. H. D. Noyes said that the particular significance of the paper was its advocacy of a closer affiliation between the eye specialist and the general practitioner. He regarded it as a great misfortune that in every specialty the tendency of the work was to narrow the field and shorten the vision of the physician devoting himself to it; and if it should follow as a result of Dr. Cock's labors that general practitioners should less frequently than now omit to make an examination of their patients' eyes, he believed that they would have accomplished a most excellent purpose. The range of affections in which the eye was concerned to a greater or less extent was immensely large; embracing as it did not only those of the entire cerebro-spinal nervous system and the peripheral nerves, but the diseases of remote organs and the condition of the blood itself.

Dr. J. E. Weeks agreed with Drs. Cocks and Noyes that if the general practitioner would make himself more familiar with eye symptoms the community would be greatly benefited. In illustration he mentioned the case of a gentleman residing in a neighboring town who suffered very greatly from neuralgia and was finally sent to New York for examination. Here it was found that he had already irretrievably lost his eyesight by glaucoma. Any neuralgic pain, therefore, which was not clearly understood should, he thought, at least awaken the apprehension of the attending physician, so that the occurrence of such a calamity as this might be averted, if possible. He went on to say that the appearances of the lids were sometimes indicative of systemic conditions, and stated that he had known the diagnosis of nasal diphtheria to be made in this manner. The diphtheria of the nasal passages had resulted in diphtheritic conjunctivitis, and if the attending physician had been familiar with the appearances of the latter the diagnosis could have been made much earlier, and the life of the patient (who died of the disease) might perhaps have been saved.

Dr. W. F. Mittendorf thought that since we had at our command such a mydriatic as cocaine, and since the ophthalmoscope was now so perfect an instrument, there was really no excuse for not examining the fundus when light was needed on a diagnosis; and he said he felt sure that if physicians in general would take the trouble to familiarize themselves with the use of the ophthalmoscope they would find it not only profitable, but exceedingly interesting to themselves.

Dr. T. R. Pooley, in referring to inadequacy of the ocular muscles, said it was just now the fad to attribute immense importance to such inadequacy, and to perform repeated operation for its relief. If many of these cases were left to themselves, or, what was better, if the patient were treated for his general condition by some sensible and intelligent practitioner, this muscular insufficiency would entirely disappear of itself. What such an individual needed was proper attention to his general health, and not special treatment from an oculist. He did not, however, mean to say, of course, that cases did not sometimes occur which required to be treated by prisms, or even by tenotomy. In the course of his remarks Dr. Pooley also called attention to the significance of intra-ocular hæmorrhage. This occurred, he said, where changes, either atheromatous or syphilitic, had taken place in the arteries, and where retinal hæmorrhage was observed the chances were very strong that hæmorrhages would occur elsewhere also. He regarded this as such an important point that he considered that whenever the retina showed this condition it was the duty of the oculist discovering it to call the immediate attention of the regular medical attendant to it, since such a patient was liable to have intra-cranial hæmorrhage at any moment.

In confirmation of the correctness of Dr. Pooley's views on this last point, the Chairman of the Section, Dr. R. C. M. Page, related the case of a gentleman whom he was attending for Bright's disease. All the symptoms had shown marked improvement and the patient was about starting for the South. As he complained of some little trouble in his sight, however, Dr. David Webster was asked to make an examination of his eyes. He ascertained that the trouble was due to retinal hæmorrhage, and in consequence of the condition which he found he expressed the opinion that the gentleman was liable to die at any time from cerebral hæmorrhage. The sequel proved that the oculist was right, for he did die from this cause within twenty-four hours.

P. B. P.

NECROLOGY.

Dr. Charles H. Nichols.

Dr. Charles H. Nichols, the distinguished head of the Bloomingdale Asylum, died December 16th somewhat unexpectedly from a complication of hepatic and intestinal diseases. He had only recently returned from a visit to the European capitals in the interest of the new Bloomingdale Asylum that is now being planned. He had suffered greatly from sea-sickness and was much reduced in strength. He was a native of Maine, born in 1820, and an alumnus of the University of Pennsylvania in the year 1843. His record at the Government Hospital for the Insane at Washington for twenty years and his ten years or more in New York City have placed him in the front rank of the alienists of his time and country.

BOOK REVIEWS.

PHYSICIANS' AND STUDENTS' READY REFERENCE SERIES: SYNOPSIS OF HUMAN ANATOMY. Being a Complete Compend of Anatomy, Including the Anatomy of the Viscera and Numerous Tables. By JAMES K. YOUNG, M.D., Instructor in Orthopædic Surgery and Assistant Demonstrator of Surgery in the University of Pennsylvania, etc. Philadelphia and London: F. A. Davis. 1889. Cloth, price, $1.40; pp. ix, 393.

In this volume the author has endeavored to furnish a concise though complete synopsis of human anatomy. His task has necessarily been a difficult one, but by resorting to various ingenious devices he has been able to abridge in some directions without sacrificing in the matter of clearness of description. Descriptive anatomy does not afford an inviting field for such work, but we believe that Dr. Young has done his work as well as it can be done.

LECTURES ON OBSTETRIC NURSING. By THEOPHILUS PARVIN, M.D., Professor of Obstetrics and Diseases of Women and Children at Jefferson Medical College; Obstetrician to the Philadelphia Hospital. Pp. viii, 104. Philadelphia: P. Blakiston, Son & Co. 1889.

These lectures are presented in a particularly agreeable and interesting form, the author having interspersed his practical instructions with many historical allusions and literary references. The intelligent nurse cannot fail to find both entertainment and profit in their perusal. It is to be regretted that the subject is not treated in greater detail, but as far as it goes one finds everything to admire and but little to criticise.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

Section of Obstetrics and Diseases of Women.

The officers of the Section of Obstetrics and Diseases of Women respectfully request those who desire to read papers in that Section at the meeting of the American Medical Association to be held in Nashville, Tenn., May 20–23, to communicate the titles thereof to either of the undersigned not later than January 15, 1890.

WILLIAM WARREN POTTER, Chairman,
284 Franklin St., Buffalo, N. Y.
JOSEPH HOFFMAN, Secretary,
126 W. Diamond St., Philadelphia, Pa.

MISCELLANY.

PRIZES OF THE SPANISH MEDICO-CHIRURGICAL ACADEMY.—The Spanish Medico-Chirurgical Academy offers prizes for the best essays on the following subjects: 1. Modern Discoveries in Physics Applied to Medicine: Have they Advanced the Science of Diagnosis? 2. Limits of the Expectant Method and the Therapeutic Value of Hygiene in Chronic Diseases of the Stomach. Each prize will consist of 250 pesetas ($50), with the title of Corresponding Member of the Academy. Essays may be written in Spanish, Portuguese, French, Italian, English or German. Each essay must bear a motto, the name and address of the author being sent in a separate sealed envelope. All essays must be in the hands of the Secretary (Montera, 22, *bajo*, Madrid), on or before Sept. 15, 1890.

LETTERS RECEIVED.

Dr. W. A. Brownell, Boston, Mass.; J. Browne, New York City; Dr. W. W. Potter, Buffalo, N. Y.; Dr. J. E. Tefft, Springfield, Mo.; Paris Medicine Co., Paris, Tenn.; Dr. William A. Edwards, San Diego, Cal.; Dr. J. E. Carpenter, Stanford, Ky.; Dr. A. J. Comstock, San Buenaventura, Cal.; Dr. W. M. Moore, Paris, Tex.; Dr. A. G. Lamothe Ramsay, St. Cloud, Minn.; Dr. Andrew Seargent, Hopkinsville, Ky.; Dr. F. B. Lovell, Daykin, Neb.; Mrs. C. H. Wright, North Madison, Ind.; Peacock Chemical Co., St. Louis, Mo.; Dr. Landon B. Edwards, Richmond, Va.; Dr. W. C. Sandrock, Baltimore, Md.; Lehn & Fink, New York; Dr. Geo. C. Potter; Honolulu, H. I.; Dr. J. M. Anders, Philadelphia; The Medical and Surgical Sanitarium, Battle Creek, Mich.; Dr. F. C. E. Mattison, Chicago; Moore's Subscription Agency, Brockport, N. Y.; The Lakeside Publishing Co., Buffalo, N. Y.; Dr. Gales B. Bullard, St. Johnsburg, Vt.; Dr. Thomas A. K. Morton, Philadelphia; Fairchild Bros. & Foster, New York; Parke, Davis & Co., Detroit, Mich.; Jerome Kidder Mfg. Co., New York; The Ontario Medical Library Association, Toronto, Can.; Dr. J. Lucius Gray, Chicago; Dr. H. J. Brooks, Dixon, Ill.; Maltine Mfg. Co., New York; Dr. J. H. Goss, Fort Lamar, Ga.; Dr. Henry S. Sevan, Chicago; Dr. Geo. F. Cook, Oxford, O.; Med. Dept. Univ. of Georgetown, Washington, D. C.; Dr. Wm. Carr, New York; John C. Harris, Zanesville, O.; I. Haldenstein, New York; Dr. N. Holton, Harkers Corners, Ill.; Fred. W. Nostrand, New York; Dr. A. F. Cominga, Rockford, Ill.; Sharpe & Dohme, Baltimore, Md.; Dr. William C. Rives, New York; Dr. G. F. Cook, Oxford, O.; E. Steiger & Co., Dr. A. M. Jacobus, New York; Dr. Walter Foly, Boston; Theo. J. VanHoren, New York; Dr. C. S. Pixley, Elkhart, Ind.; Lutz & Movius, New York.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 21, 1889, to December 27, 1889.

Major Calvin DeWitt, Surgeon (Ft. Missoula, Mont.), is granted leave of absence for one month, to take effect not later than January 1, 1890, with permission to apply at Div. Hdqrs. for an extension to include February 27, 1890.

By direction of the Secretary of War, Capt. Paul R. Brown, Asst. Surgeon, now at Trinidad, Col., will report in person to the surgeon in charge of the Army and Navy General Hospital, Hot Springs, Ark., for admission to and treatment in the hospital. Par. 16, S. O. 296, A. G. O., December 20, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 28, 1889.

P. A. Surgeon E. P. Stone, ordered to the "Independence," Mare Island, Cal.